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Lorado Taft, Sculpt.

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CONTENTS.

INDEX TO ADVERTISEMENTS.

THE INLAND ARCHITECT AND NEWS RECORD

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A Competition Agreement By New York Architects.

The subject of competitions has entered more largely into architectural practice than that of any of the allied arts. It has been discussed by societies and individuals in this country ever since the Institute, early in its history, appointed a committee to report upon the propriety of that body discussing the subject. In 1885, the Western Association formulated and issued a competition code which was so equitable and practical that it has since been distinguished principally by its disuse. The architects of New York have now taken the matter up individually and have formulated an agreement, which is printed on another page in this issue. In one clause alone does this agreement deviate from the general trend of the similar documents that have preceded it. This is in the last clause, which recommends the signature of designs. This we are inclined to believe is a mistake. It assumes that all parties to the competition are honorable men, which is not a business view by any means. Even where all parties are inclined to proceed with the strictest honesty and fairness the name of one firm of architects is apt to overshadow another and the lesser name will be beaten, be his talent what it may. But in the average competition there are apt to be architects who "lobby" and clients who will be influenced or bribed. However, the agreement is a splendid advance toward a correct competitive code practice.

Pennsylvania Capitol Building Competition.

The burning of the capitol building of the State of Pennsylvania some months ago opens to competition one of the most attractive projects presented to architects since the designing of the capitol of New York at Albany. The commissioners appointed by the governor have issued an extensive pamphlet giving the fullest details regarding the project and the agreement with architects which they subscribe to for the State in relation to designs. This agreement, which with the act passed by the legislature is printed in the pamphlet, seems to be as fair as such an arrangement can be as regards the honest intention of the commissioners to award the prize to the most worthy competitor. Whether the chance of obtaining this is worth the expense involved is for each individual to decide; for, outside of six architects engaged for a stated sum to make competitive plans, all others will compete upon an equal basis — their reward being, if successful, the adoption of their plans; and if not, the satisfaction of knowing that their work was honestly and intelligently passed upon. In addition to this, it is encouraging to note that "the architect to whom the commission is awarded will receive as compensation for his full professional services (including supervision) a fee computed at the rate of five per centum upon the cost of the work." The appointment of Prof. Warren P. Laird, of the University of Pennsylvania, as expert adviser gives assurance that in the all-important matter of adjudication the competitors will be fairly dealt with. There will be a temptation in this competition which the signers to the New York agreement will find hard to resist, for the only point which does not conform to their code is in its first article.

THE FUNDAMENTALS OF THE DEVELOPMENT OF STYLE.*

BY PETER B. WIGHT.

THE recent discussion of the two questions, "Is Architecture a Living Art?" and "Can Architecture Again Become a Living Art?" which has taken place in the Illinois Chapter of the American Institute of Architects is only one of the manifestations of a spirit of iuquiry among the older architects, which is the natural result of the investigations of the historians of architecture. This spirit of inquiry is not local; it may be seen in the writings of the older architects all over the civilized world. The inventors of new styles have had their day, and the prophets who have attempted to predict what that uew style will be have had their say. The thinkers who are now talking are neither inventors of styles nor prophets. What they are saying is only the result of the fact that a full conception of the lessons of the history of architecture has only recently been crystalized in their minds. I claim no originality for whatever part I have taken in it, but confess that I have only recently realized the full meaning of the relations of the art of architecture to the advance of science and the present condition of society, using the latter word in its fullest meaning. I have no time now to repeat any facts regarding its history, but I think that you will agree with the many who believe that the study of the history of architecture did not commence until about the time of the French Revolution, and from that time dates the confusion of modern styles which is not dissimilar to the confusion of tongues after the attempt to erect the Temple of Babel. The serious study of this history does not date back more than thirty-five years. Viollet-Leduc, who was combatted and even derided in his time, devoted his whole lifework to exemplifying the lessons of the history of architecture and advocating the importance of rationalism in building and architectural design. He threw down the gauntlet in his own country, where the formulas of modern architecture had been concreted more thau in any other; and it is only within the last twenty years that his teachings have been appreciated in Germany, England and America. Leopold Eidlitz, a veteran New York architect, inculcated similar ideas in a book entitled, "Nature and Functions of Art; More Especially of Architecture," and has repeated them in several later publications, especially in his essays on "Fashion in Architecture." Mr. Henry Van Brunt, a pupil of the late Richard M. Hunt, and a disciple for many years of the modern French school of architecture, has beeu writing and publishing papers for the last ten years, advocating liberality of thought in architectural design. Many of these papers were collected in the book published a few years ago called "Greek Lines," which was not a plea for Greek architecture, but for Greek thought. Very recently Miss Harriet Monroe has published the admirable life of the late John Welborn Root, whom most of you knew, with extracts from his writings, all of which were imbued with the modern spirit of progress and independence which were so beautifully expressed in his works. The best of his essays were written for this club, and the best of them all ou "Style," which was read by him just ten years ago, has beeu re-read before you by one of your own members very recently. You may also have read in the current publications some of the essays of Mr. Louis Sullivan, the most valuable of which is that which he read before the American Iustitute of Architects at New York, in 1894, entitled "Objective aud Subjective." If you have not read it, I will commend it especially to all of you, and you will find it in the published proceedings of the twenty-eighth annual convention of the American Institute of Architects for 1894. I cannot pass on without quoting now a sentence from this paper, which is more lucid than what we have been accustomed to expect in Mr. Sullivan's poetical rhapsodies. As describing the present condition of our art he says: "The human mind, like the silkworm oppressed with the fullness of its owu accumulation, has spun about itself gradually and slowly a cocoon that at last has shut out the light of the world from which it drew the substance of its thread. But this darkness has produced the chrysalis, and we within the darkness feel the beginning of our throes. The inevitable change, after centuries of preparation, is about to begin." Farther on he indulges in a hopefulness for a future that I ouly trust will be fulfilled, but too far away, I fear, for this generation to contemplate.

It is only in the present year that Mr. Cram, a Boston architect, has undertaken to criticise the methods of the Official School of Architecture in France, and their application to the architectural schools of our own country. This was in a paper read before the Boston Society of Architects. His criticism was on very similar grouuds to that urged by Viollet-Leduc thirty years ago. The Boston society at first did not take him seriously, and some members openly accused him of joking; but he only replied that he intended to continue the subject more at length. The *American Architect*, true to its Boston conservatism, took up some of his statements, but he boldly replied to it and maintained his ground in a communication that it printed recently.

It was only last month that Mr. Leopold Eidlitz invaded the stolid precincts of the Royal Institute of British Architects, and on the invitation of Mr. Graham, one of the vice-presidents, contributed a paper in line with some of his published statements demonstrating that no true architecture could prevail unless the functions of material and construction were truly expressed in the design, and that such materials being largely differeut now from what they were during the formative periods of the historical styles, a new evolution in design must necessarily be produced. It is amusing to read the discussion that ensued. British couservatism was aroused. It did not seem to be understood that Mr. Eidlitz was a retired architect of large experience and now a philosophical thinker, but it was thought that he was an experimentalist looking for a new style. Professor Aitchison, the president, came to the rescue, however, and sustained the paper of Mr. Eidlitz, quoting even from his book, and showing not only his own breadth of sentiment but extended knowledge of the evolutions of architectural thought which we are all experiencing.

These discussions are, as I have said, the natural result of knowledge that has been revealed to us through the thoughtful study of the history of architecture and a better understanding of it. They are inevitable uow. The practice of architecture without serious study has been carried on since the French Revolution, and the more we have learned of the actual remains of the buildings of past eras the more we have copied them. We have not stopped to inquire why they were *what* they were. This kind of study has only resulted in our discovering the *refinements* of each historical style that we have used and not their true spirit or generating functions. In our own country, twenty-five years ago, very few of us understood these refinements; but the methods of study for the young having been conducted in that direction, most of us can appreciate the refinements of Greek detail, of Italiau carving, and of the château transitional style of France, and can reproduce them so beautifully that we flatter ourselves that we are now artists and have succeeded in reviving the art of architecture in all its purity without enslavement to any particular style. As a matter of fact we are only followiug fashions which we have set up for ourselves, or rather following what we think others have set up as fashious that we must follow to be in the swim. That there is a prevailing fashion in architecture today in our own country, all must admit. We have only to look back a few years to find that some other fashion prevailed. There may be another fashionable style before we see much evidence of a growing rationalism.

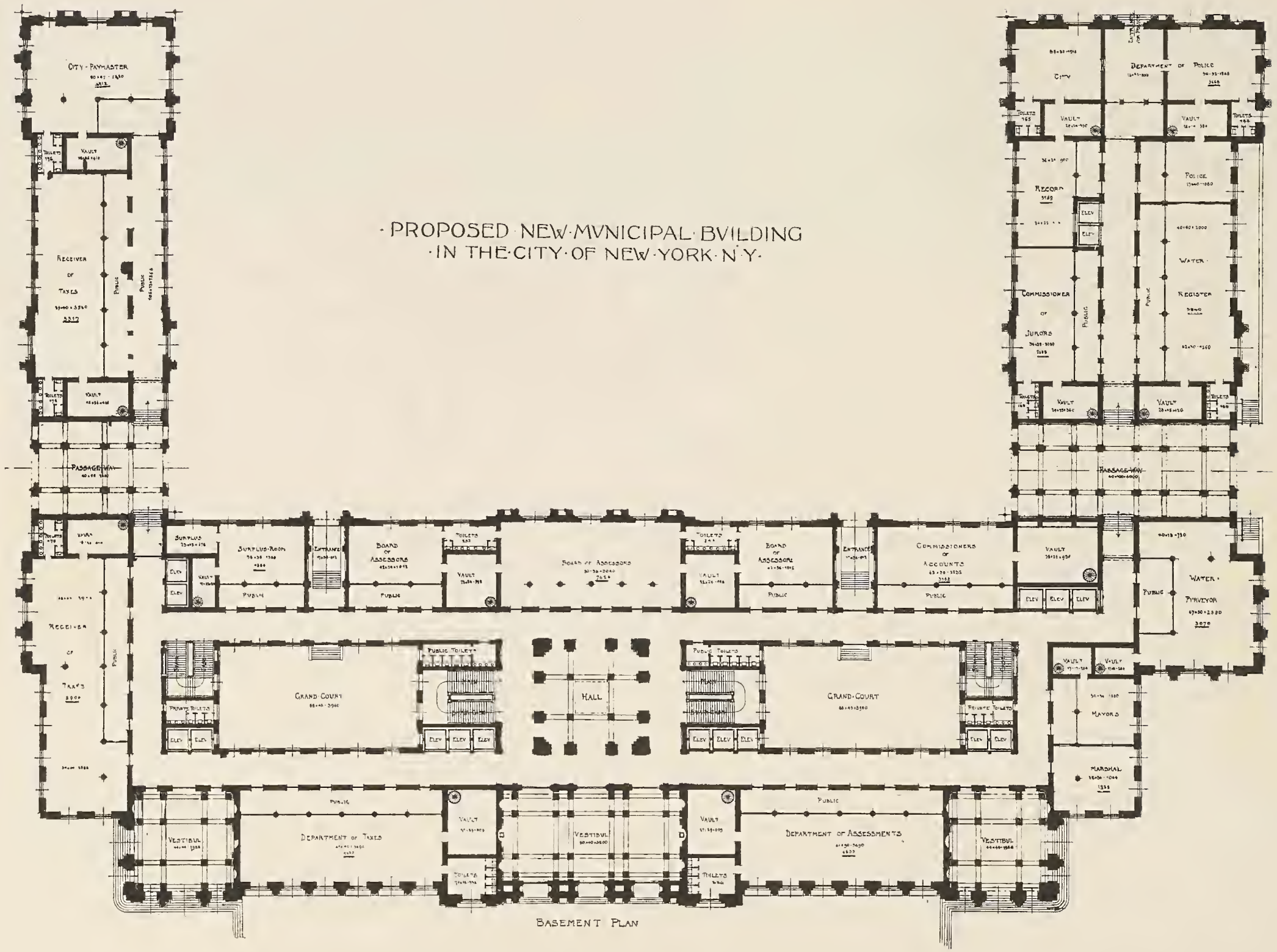
The practice of the present period, and of all periods since architecture has been a recognized art in America, has been divided between two classes of architects — those who use the fashionable style and those who are eclectics, and use such historical styles as seem to suit their purpose. There are still among us eclectics as well as those who follow the styles that are in vogue.

But every year that we continue iu this course puts off the time when we uay have a rational understanding of the true functions of our art. The beauty aud perfection of our present works, as translations of those of our predecessors in times when architecture was a living art, have tended to develop our self-consciousness to the highest degree. This kind of self-consciousness is better called by the plain word *vanity*. This is the prevailing fault of the successful architects of the present day; and I speak now and always of American architects, for I think that architecture now has more vitality here than in any other country, which could not have been said twenty years ago. We uow have more opportunity and more aspiration to do great things than we ever had before We have had so much to do that we have not had time to think of the underlying principles of a true architectural art — that is, most of us. But the present dullness in building operations has not, I hope, been without its compensations. It has given some of us time to think. You are young men. You are all filled with high aspirations and laudable ambitions. You feel that you have arrived in the world just in time to ride on a great wave of progress. You have read and been told about the conditions through which our art has progressed since the first part of this century, when architectural art had its birth iu America; and have heard the congratulations of many of its enthusiastic votaries that we have at last arrived at the new renaissance of art. I can readily appreciate, therefore, that it is with a feeling of protest that you hear some of us who are older and have fought the battles in our youth, that you think you are fighting now, tell you that, notwithstanding all this, architecture is not today a living art, and that we must begin all over again. If you think it is because we have any prejudices against any particular style or styles, you are mistaken. It is because the cultivation of the styles of antiquity is the end and not the means of most modern architects. It is because the styles are used too much for their own sake. It is because we so seldom see any independence of thought in so many modern structures that are extolled to the skies. I do uot mean to say by this that there are no recent buildings following the historic styles that are distinguished by independent thought. There are many, and I might mention some; but this is not the place for iudividual criticism. But, unfortunately, praise generally follows reputations that have been early acquired, but not sustained by later works. It is a beautiful thing to see men stand together, but there is too much of mutual admiratiou in this world aud especially in the architectural profession.

I have said that you are young men. It is difficult for me to realize that I have the right to call you such. Whatever enthusiasm I may be endowed with is with me still and is struggling to find expressive words to tell you that I am in sympathy with all your hopes and aspirations. I would not be here if this were not so. I do not blame you for following leaders who may not be the best guides. But I want to help you to do some serious thiuking, by letting you know that others, older than yourselves, have been doing so for a long time.

*An address delivered before the Chicago Architectural Club, April 19, 1897.

PROPOSED NEW MUNICIPAL BUILDING
IN THE CITY OF NEW YORK N.Y.



BASEMENT PLAN

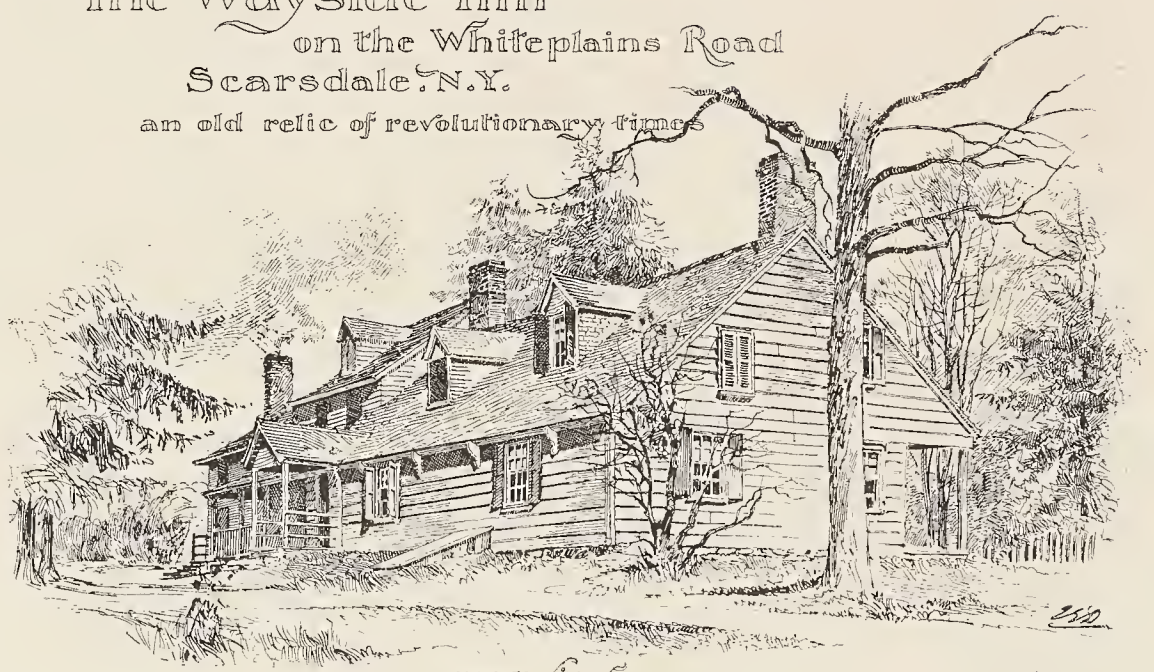
NORTH SOUTH SECTION
THROUGH MAIN BUILDING

STABLE BUILDING FOR W. G. IRVIN, HONOLULU, H. I.

RIPLEY & DICKEY, ARCHITECTS.

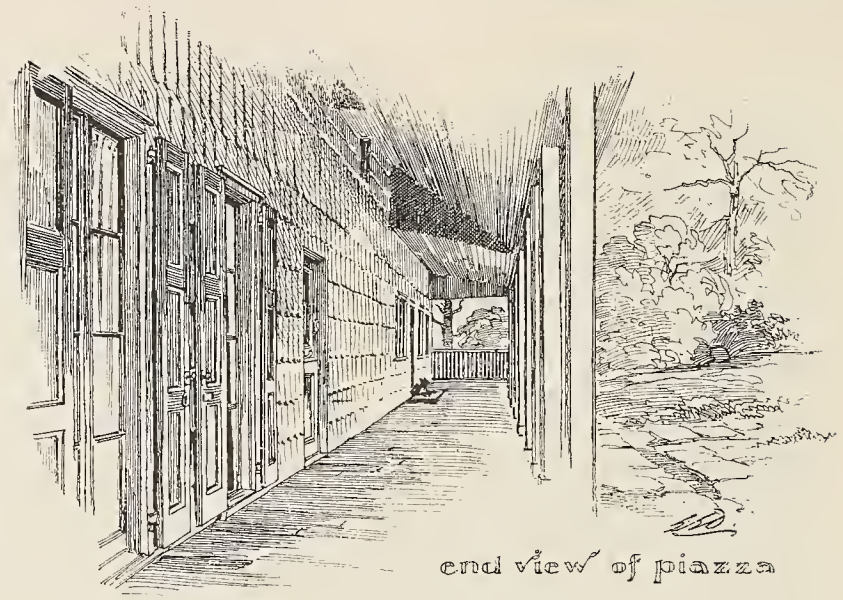
"The Wayside Inn" on the Whiteplains Road Scarsdale. N.Y.

an old relic of revolutionary times

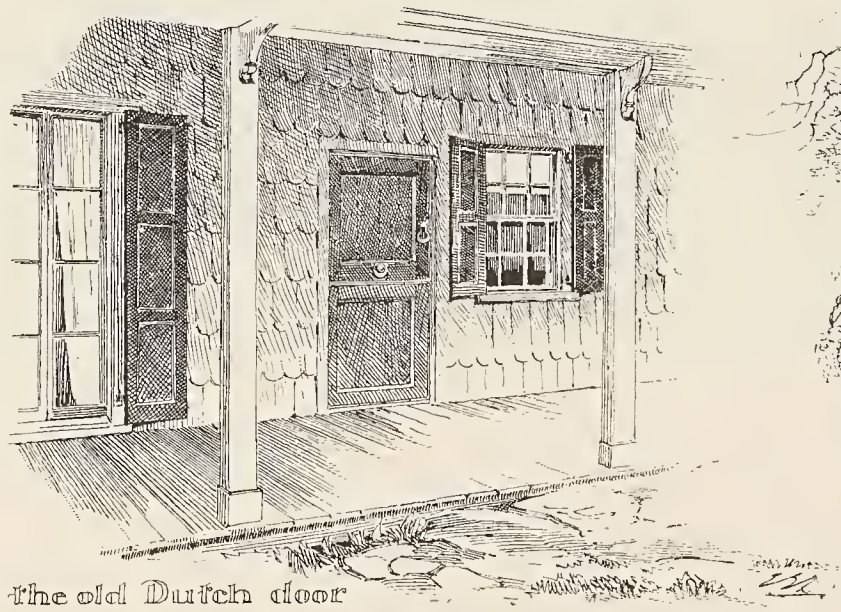


rear view.

Rustic Sketches.



end view of piazza



the old Dutch door

the road front.

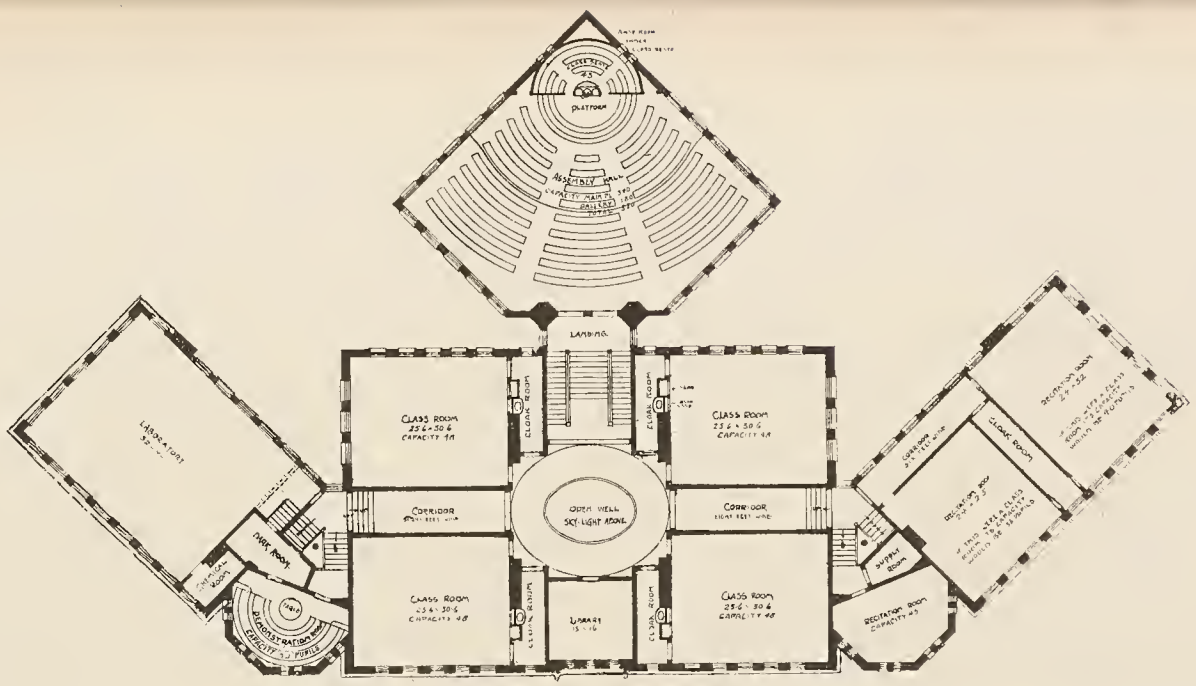
DETAIL OF ENTRANCE, NEW CORCORAN GALLERY OF ART, WASHINGTON, D. C.

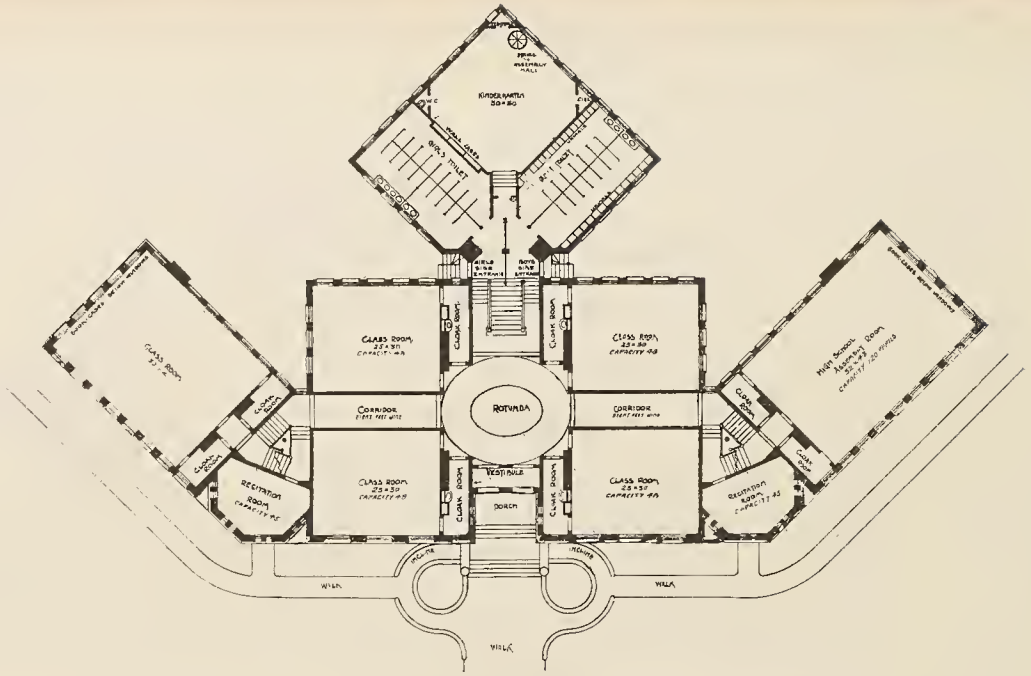
ERNEST FLAGG, ARCHITECT, NEW YORK.

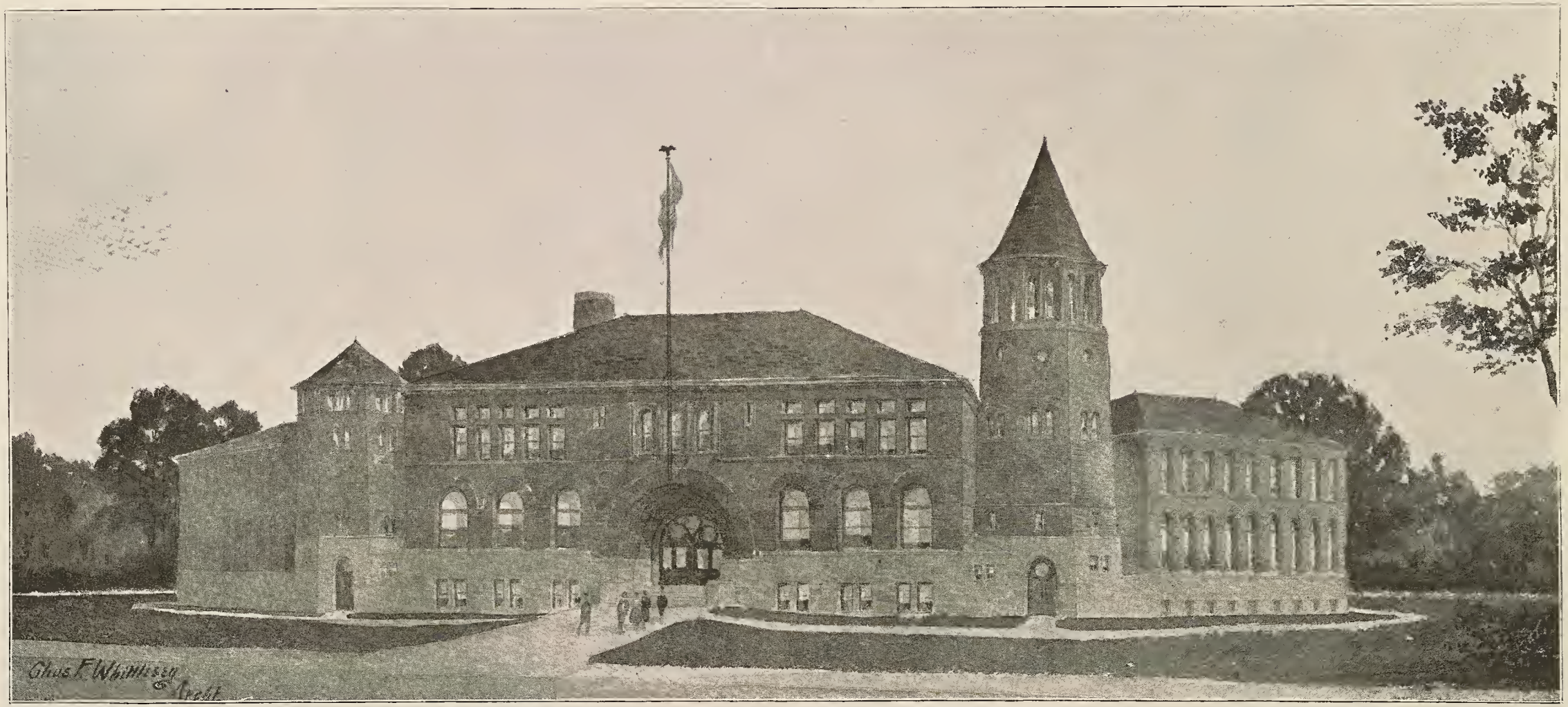
NEW CORCORAN GALLERY OF ART, WASHINGTON, D. C.

ERNEST FLAGG, ARCHITECT, NEW YORK.

The old
"Van Cortlandt" Manor House.
Croton. N.Y.







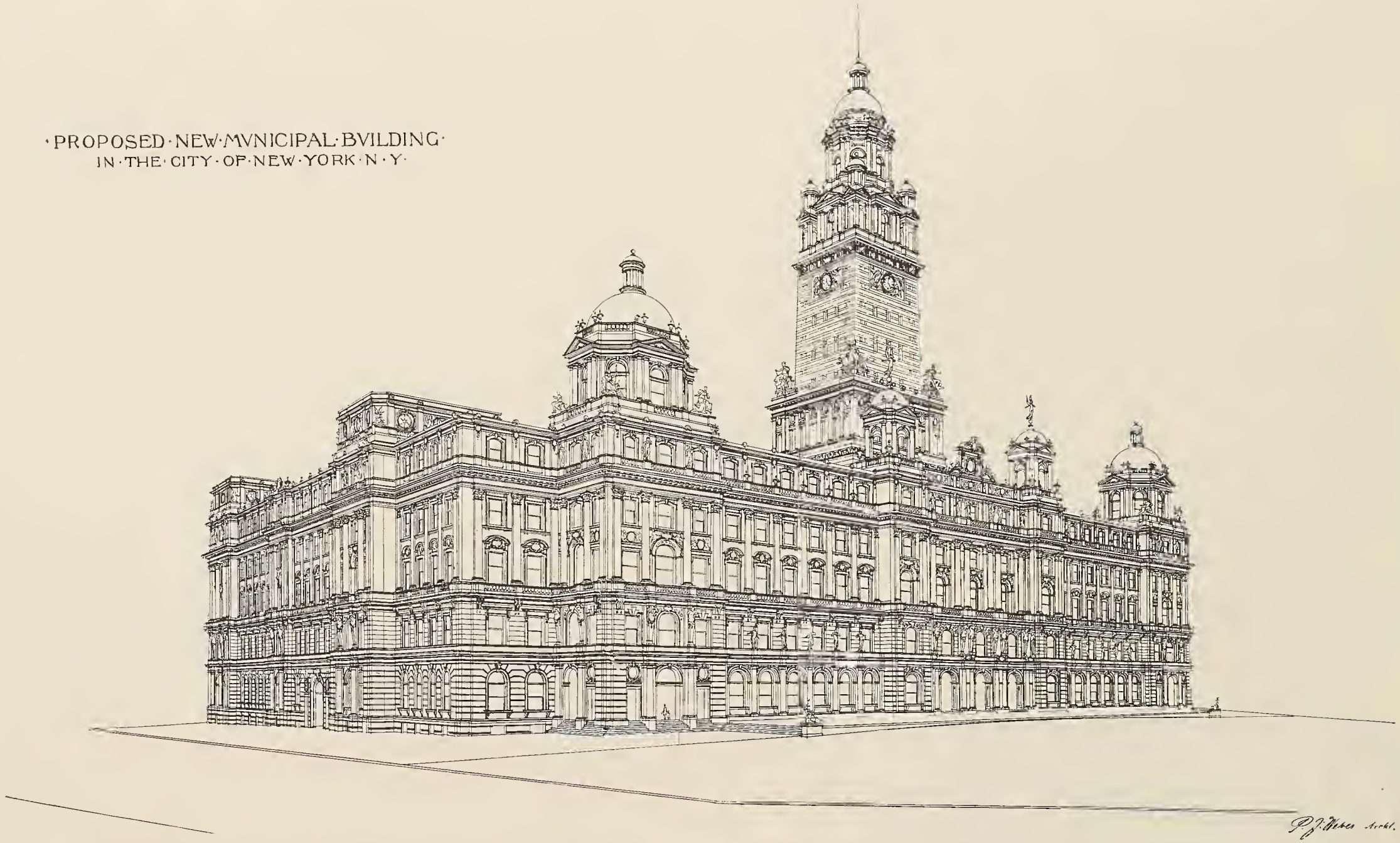
SCHOOL BUILDING FOR RIVERSIDE, ILLINOIS.

CHARLES F. WHITTLESEY, ARCHITECT, CHICAGO.

REAR-ELEVATION AND SECTION THROUGH
EAST-AND WEST-WINGS.

SECOND PREMIATED DESIGN, PROPOSED NEW MUNICIPAL BUILDING IN THE CITY OF NEW YORK.

SUBMITTED IN COMPETITION BY P. J. WEBER, ARCHITECT, CHICAGO.



SECOND PREMIATED DESIGN, PROPOSED NEW MUNICIPAL BUILDING IN THE CITY OF NEW YORK.

Submitted in Competition by P. J. Weber, Architect, Chicago.

Consider your own experience. Perhaps you have begun your professioual work filled with doubts and fears. Aside from the technical information that you have acquired, there lie before you two things, the history of the styles of past generations and the work being executed all around you. If you have studied the old architectures, your admiration and affection have gone out to some one of them, and you wonder why the busy and active architects are not designing in the style you have learned to love. When you have anything to do you fear to try your pet style because some great (?) man never uses it, and you commence by following in his footsteps and doing something with which you have no hearty sympathy. You may be right or you may be wrong in following precedent, but you have begun to smother your own independent thought. Thenceforth, having started on a course, you fear to leave it, but having denied your own personal right of individual judgment it is easy for you to confirm it by becoming a disciple of the great man to whom you become a follower. You might have used the style you loved for your first work, and it might have been a very inappropriate one. But it would have been better for you to find this out by your own experience than to deny yourself the right of individual judgment. It is just the same if you have come from a school of architecture. It lays before you a splendid repast composed of the choicest viands, some of which tickle your palate, and then you are told that they are all poison but one. You are like Katharina in the house of Petruchio, the school of domestic training for a recalcitrant wife. You come out knowing all about the dishes, but intellectually starved. As soon as you are your own master you hunt up the forbidden fruit, if you have courage to do so, and find it is sweet and good ; so if you live on plain fare all your lives it is your own fault. I will only mention two men of the former class for illustration because they were both educated thoroughly at the School of Fine Arts, in France—the late Henry Hobson Richardson and our contemporary, Louis J. Sullivan. It does not reflect upon the thoroughness of teaching of that school to say that neither of these men accepted the influences that surround it. The foundation of all that they have done was the thorough training they received. They both had the courage of their own convictions of what was right and wrong, and their works are the product of independent thought, disciplined and subjected to the conditions of modern life. I would not have mentioned the living here but to take this opportunity to say to all who enthused over the architectural demonstration at the World's Columbian Exposition, that the consensus of opinion of all the French architects who visited it was that the works of Mr. Sullivan were the only ones worth remembering. By special request, duplicates of casts of decorative work by him have been placed in one of the museums of France.

Consider again some of your experiences in your own competitions where you are presumed to do your best. I believe that in these you have always been free to select the architecture and decorative treatment of your designs. Up to five years ago the competitors were very independent in this respect. The present year there is an almost entire uniformity in the historical style now in vogue that forms their basis. I would like to know how many of you would have selected other or independent styles of treatment had you supposed they would not prejudice you in the eyes of the jury? I would not impugn the motives of all, for doubtless very many conscientiously believed that they had put forth their best efforts. If any of you thought you could have better solved the problem, to your own satisfaction, in a Moorish, Byzantine or any other historic style, or even in the independent way of working so successfully followed by Mr. Sullivan, you have been untrue to yourselves, following the dictates of selfishness and policy, and becoming stumbling blocks of demoralization to your whole future careers. This is the common experience in competitions for actual work, which so rarely result in the selection of good designs. If every competitor would try to suit himself rather than the committee, the results would be very different.

Assuming, for the sake of argument, that the new Renaissance has come to stay and the architectural millenium is near at hand ; that fashion is good as long as it lasts ; in fact, that architecture in America is and means to be a living art in spite of the old croakers and disappointed valetudinarians—assuming all this, the several illustrations here given only show from actual experience that the art of architecture is not without its trials and tribulations ; that the practice of the art by those inventions of the sixteenth century, revived in the nineteenth, called architects, is no better understood in relation to science and life than it was in the first of these years ; that "sweet bells are still jangled and out of tune," and that we are all slaves to conventions, precedents and obsolete formulas.

The Savior of Men said, "Except ye be converted, and become as little children, ye shall not enter into the kingdom of heaven"; and "Except a man be born again, he cannot see the kingdom of God." Is there any hope for the architect of the present day unless he conforms to these laws of God? That is the burning question. Pope says "A little learning is a dangerous thing," which is most true. We cannot throw away or deny the existence of that which we have. We cannot keep a knowledge of the past from future generations. We cannot go on like our forefathers in the great periods of art in blissful ignorance of all that had been done by anyone but our immediate predecessors, and produce grander works than had ever before been seen on earth. We must work with the embarrassment of this rich legacy clinging to us. The condition is a new one. It never existed before the nineteenth century. It brings a fearful strain upon the memory and makes us lie awake nights. We cannot get along with a smattering, and there is no quick and easy road to knowledge as described in the advertisements of certain books. We are liable to make nuisances of ourselves, as Pope says, if we get only a little of it, and hence we must carry all we can in our heads ; and as there are always weak heads there will always be weak architects and the world must put up with them. They have the same chances of material success as the strong heads, because the public is not sufficiently educated to discriminate between the two kinds. And here comes the great stumbling block to architectural progress which makes pessimists of many of us and drives us almost to despair. Suppose *we* are all right, what are we to do with the uneducated public? What can we do *in spite of* this public? We architects are part of the machinery of modern society. It is not our fault that we are here, and we cannot abolish ourselves if we want to. And yet we know that all the greatest architecture that the world has produced was not the work of architects, constituted as we are, but of men developing their own traditional art, and not looking to history for it. We have got to make the best of the situation. We find before us a public that thinks it is educated and appreciative, and we know that it is not. All that it can do is to praise the latest fashion in architecture and condemn all that is not in that fashion, just as it does with the latest styles in bonnets, clothes or carriages.

I do not see how society can reform itself, and the natural inference is that we must try to reform and educate it. This is another herculean task, as if all our others were not sufficient for us. But we at least can try. We must tell these people first that Art knows no fashion ; that architecture is not a matter of dress, and that it is not all decoration ; that *style* is evolutionary, not changeable ; that true architecture is the expression of the life of a nation in concrete form, and not something to be borrowed from others with whom we have no human sympathy. We can try to do this with word and works. We may not succeed, but should not, therefore, be discouraged. We can at least satisfy our own conscience in whatever we do, and hope for the best. Conscientiousness is a very different thing from self-consciousness. The latter is the very bane of our time and generation.

You may ask how you are to do this. I may best begin by telling you what not to do. I would not advise anyone to turn his back on all the historical styles any more than I would tell him to close and forget the book of history, which I know he cannot do. The fundamentals of the development of style are found first in the materials that we have to use to build our house with, as they always have been throughout all time. Let the architect design for his materials, and not fit materials to his design. The first step requires more of judgment than artistic inspiration ; it is the first lesson of history ; but it is more complicated with us than in any previous period. For the great improvement in transportation has made a greater variety of materials accessible than ever before, and economic questions enter largely into the solution. As soon as the designer ceases to have the appropriate and economical material in mind when reflecting upon every feature of his design, he is traveling without rudder or lights. He is liable to run on dangerous shores. This does not apply to one material, but to all that are employed in the various parts of a building—exterior and interior. Next, with regard to design, he will be influenced mostly by that historical style which was developed in similar or most nearly related material. If any of his materials had no counterpart in history he is free to use them without regard to it. Here he at once begins to feel his emancipation from precedents. Then with regard to details, it is safest for the beginner to copy them from good examples at first. As his experience increases he will begin to feel that they do not exactly suit him, and he should not hesitate to modify them according to his rational understanding of their use, and his feeling for what he considers beautiful. If he is logical he can trust that his feelings will not run away with his good sense. As time goes on and successive works come to his hand, every liberal departure from the models he originally followed will be one step more in the development of style.

But this will only be the style of one man, and many have already followed the very method of design that I am pointing out ; so I am telling you nothing new. You all can name men who have been and are doing it. But they die and others take their place, but not always to follow in their footsteps. "The evil that men do lives after them, the good is ofttimes buried with their bones." Such is the fate of individual effort which avails little when we consider the great number of individuals, and the diversity of their undertakings. Something more and better than this is wanted. We hear of schools of medicine, schools of political economy, and in the fine arts there are many schools, such as the classic and realistic schools of sculpture, and in painting the Munich school, the Barbizon school and the Impressionist school. They are sometimes composed of men working together according to certain more or less formulated ideas, and sometimes according to a settled purpose. The latter are those who accomplish the most. But we do not hear of schools of architecture, unless the modern French school may be such ; but if it is, it ranks with the former class, of men working only according to formulated ideas. As little can result from individual effort and the promulgation of formulated ideas, it remains that the association of individuals with a *settled purpose* is the only practicable method of instituting reforms. This is what my friend Van Brunt calls "an intelligent unity of effort" among architects, and he reiterates it in all his recent articles. As long as nothing of the

kind exists I see no hope for a future that will not be afflicted by the coming and going of ephemeral fashions in architecture.

You have been well told what "Style" is in the generic sense of the word, and therefore I need not repeat it. But style cannot be built without a foundation, and that foundation is to be found in the principles that have actuated every great style that the world has known. I have only suggested a few of these fundamentals, but the most important of them. I would not advocate freedom from all the actual styles of the past. Individuals may exercise their right to them, as some already have; but it is unity of effort among men who are formally banded together, as the Freemasons were in the middle ages, having a settled purpose in view, and conscientiously working according to fundamental principles which all recognize, that will ever make architecture a living art. This is on the supposition that it is to be done by architects holding the relations that they now do to society, and to each other. If it cannot be done by modern architects to whom is assigned the privilege of doing all the designing, we will continue to go on in our devious courses, and there will never be a revival of our art in the fullest sense, until modern society has relapsed into a semi-barbarism, as it did from the fifth to the tenth centuries in Europe, everywhere outside of the domain of the Caliphs, and a new civilization has been slowly constructed.

IMITATION IN ARCHITECTURE.*

BY A. C. MUNOZ.

THE almost sudden development of art in all its branches that has taken place during the last ten or fifteen years in this country, and which is one of the many manifestations of its vitality, is also one of the most remarkable illustrations of what can be accomplished by an energetic nation willing to avail itself of the experience and of the materials which during a long series of centuries have been accumulated within its boundaries, as well as in other countries.

All nations, or perhaps better, all races, have had their period of more or less perfect artistic development, which almost invariably coincided with that of their highest state of civilization, and of all the manifestations of art none is as much affected by civilization as is architecture. None of the other arts combine the utilitarian or technic with the æsthetic in such perfect harmony and with such good balance as architecture; they are not, therefore, as good standards by which the progress and culture of a nation may be judged, for civilization is not only the striving for moral perfection, but also for a material one. And as there is an ideal of moral as well as of material perfection to which in our actual moral or material life we aim to approach, so there is an ideal architecture, the nearest approach to which in actual architecture must mark the moment of highest civilization.

The progress of development by which architecture gradually approached the ideal, and which from the early days of mankind has been more or less spasmodic, seems to have suddenly waked from a slumber of three centuries, and having found in this country the large field which its new energy demanded, has already in a few years attained a vigor and development never before equaled in the history of architecture. It is too soon yet to prophesy how near the ideal point we will reach, or which of the various paths we are pursuing leads in the right direction, though it is safe to predict results never before attained, being, as we are, possessed with materials and with facilities of execution never before possessed by any people, besides the advantages which our present civilization gives us, added to the accumulated experience of many centuries, and above all the exuberant energy and activity of this progressive nation.

Various are the ways by which we are endeavoring to improve our architecture to better satisfy the needs of modern life, the means of construction, and not least, though often last, the requirements of art. Speaking broadly, all the different ways may be narrowed down to two processes. One, invention, and the other imitation, which working together are the factors composing the development or evolution of architecture, as of any other art, for evolution may be defined as the repetition or imitation of old forms modified by invention.

The object of this paper will be to broadly point out the relative merits of these two processes and their effect on architectural development, limiting ourselves to the field of classic and of Renaissance architecture.

It would seem most logical to consider imitation as the most simple and primitive of the two processes, yet as a matter of fact it is not so; the earliest examples of decoration known to us, and which are found in remains of the stone age, are purely geometrical, consisting of lines straight or curved, points and the like, and utterly unlike anything that could suggest or have been suggested by imitation of nature. Even in our days certain savage tribes decorate their utensils with geometrical patterns, while the tattoo marks of other tribes are distinctly geometrical. This precedence of invention is not limited to the primitive races or to savages; almost any modern civilized child would give evidence of this fact if, knife in hand, he is allowed to decorate a piece of wood according to his own ideas; the probabilities are that he would not imitate any natural forms, but would be satisfied with scratching lines and the like.

Thus it appears that invention is the most primitive of the two processes, and that imitation, which generally follows it, is a manifestation of higher degrees of culture or civilization; this is proved by the fact that all the remains of past ages having ornaments in imitation of natural forms belong to later periods. Another striking instance which confirms the above statements is to be found in the history of painting, especially in that of landscape painting, for it was only about the beginning of this century that landscape painters finally gave up the old school of more or less "invented landscape" for the modern school of landscapes painted from nature. Also in our present architecture, we find proofs of this precedence of invention over imitation, though not as clear ones as in the primitive ages; not that their mutual relations have changed, but because of the greater variety and complexity of material we have to work from, and because of the greater rapidity with which nowadays the most sweeping changes take place. Also in these days, even our great conceptions are generally the result of one man's work, or of a body of men working together as one during a comparatively short period, and availing himself of all the endless material for inspiration handed down by previous ages, while the work of old, on the contrary, often extended over a period of several generations, and with only a limited supply of material at their command, that could be used for their inspiration.

Also recent inventions, like photography, fast travel, etc., have practically annulled time and distance, placing the modern architect within reach of any part of the world, are factors tending to upset and materially change the old process of evolution in architecture, with the result that, whereas the architecture of former times expressed more directly the culture of the nation, today it is almost wholly an expression of the architect's degree of culture.

Also, though it appears that imitation in art has so far, at least, been the result of education, perhaps in our enlightened times or in future and still more enlightened days, the same relation between imitation and invention may not prove true, and that by a high degree of culture we may become able to invent as well as we can now imitate, but from present indication, the good old rule will hold good yet for some time to come.

It is not possible to find a series of modern buildings in which the changes due to evolution in its two components of invention and imitation are well defined and follow in chronological order, but good examples of the practical working of both processes are not lacking. In considering the various buildings that will be mentioned allusion will only be made to their façades, for, though the plan is as important a part of a design, the requirements of the day and the means and ways of construction differ so much from those of former days, that a direct copy or imitation of an old plan is seldom practicable, while as architecture is practiced nowadays a façade of an old building may easily be stuck in front of a new one.

Having thus indicated a few general principles, we will take up a few examples to further emphasize the statements already made.

Although not belonging to the present architectural period, there is a group of classic buildings, mostly Greek, which are too important to pass over unnoticed, as they furnish very good illustrations of both invention and imitation pure and simple, and of how the same processes that may lead to success may under certain conditions lead to indifferent results.

Of these buildings the Customhouse and the Merchants' Exchange in this city are good examples. Invention and imitation take their turns in these designs, and though it cannot be said of any of these buildings that they are either all invention or all imitation, yet we can easily see which of the two processes predominated in their designs.

The Customhouse, originally the Bank of the United States, as far as the relative proportions are concerned, is a very close copy of the Parthenon at Athens, built during the middle of the fifth century, B. C., and even the angle of inclination of the pediment is practically the same as in the Greek Temple. Of course, it loses in monumental character on account of the large glazed, modern double hung windows, on account of its smaller dimensions and on account of the utter absence of ornaments, the Greek example having been highly decorated, not only with color, but also with sculpture, of which that of the pediment and the metopes must have given great richness to the whole.

All the same, the Customhouse is a very pleasing building, though its old and modern features clash to such an extent as to seriously mar the effect of the whole, and prove fairly well that Greek temples, in themselves very beautiful, lose many of their good qualities when adapted to modern utilitarian purposes.

The Merchants' Exchange is another of the classic buildings in which both invention and imitation take equal shares. The general plan is unlike any Greek or Roman building, but the details, such as the capitals, entablatures, etc., are mostly taken from the so-called Choragic Monument of Lysicrates, in Athens, built in the year 335 B. C.; in fact, the lantern which surmounts the dome is almost an exact copy of the Athenian example, modified by the introduction of large windows between the three-quarter columns, which space in the Greek monument was left plain, and differing also in that it is wood, while its prototype is of stone. The semi-circular colonnade of the east front might have been suggested by any of the round temples, which, like that of Vesta at Tivoli, or the Temple of Hercules in Rome (near the Church of S. Maria in Cosmedin), consisted of a central round "cella" or place of worship surrounded by a colonnade.

*Published in the Philadelphia *Times*, and reproduced as an excellent example of the general direction pursued by modern thought in regard to preseut-day architectural design.

These two buildings mentioned suffice to point out the characteristic of the style of architecture which was in fashion during the period beginning about the year 1830, and which lasted for some twenty years. The chief characteristic is the lack of imagination which prevailed then, at least in architecture, and the most successful designs of the period are those in which close imitation predominated, while most attempts at originality were distinct failures; proving, perhaps, that the designers of those days were not educated enough to invent successfully and that, on the other hand, through their lack of imagination, they were compelled to adhere to faithful imitations of old examples as given in books of architecture, perhaps such books as Palladio, Vignola, Stuart and Revett and others. The work of this period distinctly proves that no adaptation of or evolution from any old style can be successful, whether imitation or invention prevail, unless both of these are guided by true artistic feeling, without which any work, however otherwise perfect, descends to the level of a mechanical production.

Before considering the buildings belonging to the present period and derived from Renaissance examples, and for once going outside the limits of this paper, the First Methodist Episcopal Church of Germantown will be mentioned, as it is a very successful imitation, worthy of notice. The upper half of the tower strongly resembles that of the Church of St. Mary at St. Neots, Huntingdonshire, England, a very fine example of the "Perpendicular Gothic."

Many of the details are different in the Germantown church, though in the same spirit as those of the English example. The extent of invention and imitation is clearly seen, as also the fact that they have been controlled by good taste and feeling, without the aid of which it would not have been the successful design that it is of the new classic buildings.

The Boston Public Library in Boston is perhaps the best example to illustrate the purpose of this paper. The great and almost unprecedented advancement in architecture which it represents is at once apparent by comparing this building with some belonging to the period during which the Customhouse, the Merchants' Exchange, Girard College, etc., were built.

Here, again, imitation and invention have worked together, controlled by a strong and feeling hand, which, while following in its general conception the main features of a previous and similar building, imparted to it its own characteristics.

The previous building referred to is the Library of Ste. Genevieve in Paris, built about the beginning of this century by Duban, one of the greatest architects of the First Empire.

It is not surprising that in designing the Boston Public Library a scheme should have been adopted which had already been successfully tried by such good authority and further advocated by another, James Ferguson, who in his History of Modern Architecture, says: "The Library of St. Genevieve is another of the new edifices of Paris well deserving of study, being wholly astylar, and, without pretending to be anything beyond a modern depository of books, it gives a promise of common sense being once more thought compatible with architectural art."

The three entrance arches of the Boston Library are a great improvement over the single entrance of its predecessor; as much may be said of the greater width of the piers in proportion to their height, and it is fortunate that the length of the façade limited the number of bays to thirteen, thus avoiding a certain amount of monopoly produced by the nineteen bays of the Library of St. Genevieve.

The American Fine Arts Society building, on West Fifty-seventh street, New York, is a good specimen of an old façade adapted to new buildings of entirely different plan and built for an entirely different purpose. Its façade strongly resembles that of the house of Francis I. of France, originally built in 1523 for a hunting lodge at Moret, forest of Fontainebleau, and now reconstructed in Paris on the Cours la Reine.

The selection of this building as the model for the American Fine Arts Society building was not a happy one, and the addition of an extremely plain basement story has not improved the design. Also, the lesser amount of ornamentation in the New York building deprives it of one of its predecessor's best features, which is a richness of ornamentation so well distributed and so well balanced by contrasting plain surfaces that the effect is almost one of simplicity.

The severity of the basement story in the American Fine Arts Society building is in such a contrast with the upper stories that it detracts from the harmony of the whole, especially when taken in connection with its surroundings, for, while the New York building is one of many fronting on Fifty-seventh street with nothing but the pavement or a side street before it, the house of Francis I. stands on a narrow terrace, bordered by balustrades and decorated with shrubs and flowers, while the trees of the wide quay in front of it greatly add to the beauty of its surroundings.

Another good adaptation of a beautiful old example is the tower of the Madison Square Garden in New York. In proportion and details it is as good if not better than the Giralda Tower in Seville, Spain, from which it is derived, but it lacks some of its predecessor's most effective features, such as the great variety of color in the whole and the great richness of relief ornamentation in the shaft. True, it is a more consistent design than the Giralda, being wholly in the Renaissance style, but this deprives it of the charm and poetry which no other tower in the world possesses in such a degree as the Giralda, and which may perhaps be due to the masterly manner in which its Moorish shaft was made to support a Renaissance belfry, utterly different in style and design, without producing the least effect of incongruity.

The shaft of the Giralda is of light red brick, with its many Moorish windows, its balconies, its richly decorated panels full of all sorts of colors, produced by the uneven quality of the bricks and by the effect of weather, further enhanced by the great variety of light and shadow with which the brilliant sunshine of southern Spain brings out the rich panel decoration and gives it an unusual amount of life and sparkle; this, in the Madison Square Garden tower, is replaced by a plain, light-buff brick shaft, having perfectly plain square-headed windows, with limestone sills and lintels, and without any other decoration than a geometrical pattern produced on its surface by bricks of darker color.

The belfry proper, somewhat dull in color, is beautiful in design and details, and on the whole this tower is a beautiful design, crowned by a no less beautiful "Giralda" (in old Spanish, meaning a weather vane), representing Diana.

These examples of recent architecture sufficiently illustrate what may be accomplished by a judicious adaptation of old designs to our present buildings, and perhaps it may be safe to say that, taking into consideration our present degree of education and artistic development, which, though greatly advanced, is far from perfect, it is more natural that good results should be obtained by more imitation and less invention than otherwise. For where a good old design is adapted to a modern building, we start on a foundation already representing the thought and labor of perhaps many years, at times when more thought and labor were bestowed upon designs and buildings from what generally is our present practice.

Imitation or repetition of old forms with gradual improvements is the natural process of evolution by which all things have slowly come to be perfect works of nature. Similarly, the development of evolution of architecture should be a constant repetition of old forms gradually improved by invention, which process need not involve monotony, as many are the good seeds all ready for cultivation and development, and as the process of evolution in nature has produced an infinite variety of utterly different forms, all of which perhaps had a common origin, there is no reason to suppose that the same may not apply to an art which, like architecture, expresses so many of the manifestations of human life, whether animal in its utilitarian considerations or spiritual in its more æsthetic or purely artistic conceptions.

IS ARCHITECTURE A LIVING ART?

BY DWIGHT H. PERKINS, ARCHITECT.

WE have listened during the first evening of this symposium to a very able statement of the possible nature of the art of architecture and to a putting of the question, "Can Architecture Again Become a Living Art?" that made us realize to our chagrin some of the conditions extant, but one which left a few of us at least optimistic for the future.

In the second discourse we were given in historical review the architecture of other ages and countries, and were told of the examples wherein art was "living and indigenous" and where it was not.

In the papers and the discussions which followed, and in writings of many people within the last few years, there has been a common undercurrent easily recognizable. Passing hastily in review we have heard and assented to the propositions that:

1. The highest artistic expression can only be obtained when the purposes to which the structure is to be put are frankly recognized and their character is allowed to dominate the composition.

2. That no material should be used in any way unnatural to itself; that plaster and galvanized iron should not be given the forms of stone, and that stone should not be given the forms of wood or iron. That the peculiar ductility of terra cotta when it is in the form of wet clay should not only be expressed, but that failure to use its ductility and varied color is a shirking of one's responsibilities.

3. That locality—generally and specifically considered—forms the basis of an architectural composition, that setting and accessories of an indigenous character are indispensable.

4. That we reverently acknowledge the incalculable debt we owe to past ages, but we also recognize that in using precedent we are too apt to confound the material expression with the spirit in which ancient builders wrought. When we stop to consider we believe that the ancients, if they are conscious of what we are now doing, must be much more flattered when we show the classic directness and sincerity that is evidenced in the Brooklyn bridge than when we slavishly appropriate a Greek temple to modern uses to which it is ill adapted.

5. That style is universal, that it is a combination of sincerity, fitness and good taste accented with creative and poetic genius. That it must not be confounded with "styles" which are applicable only to the times, purposes and surroundings out of which they sprang, and that only to the extent to which earlier problems are parallel to ours are earlier buildings to be copied. Absolute parallelism is, however, unthinkable.

6. That our duties toward the public are imperative and lie in the line of showing them what may be done by sincerity and simplicity, and toward our brother practitioners by courageously and persistently living up to our own ideals.

7. That our municipal and governmental expression (architecturally speaking) depend upon honest and efficient govern-

ment, and that it is the duty of architects to enter politics and take an active, self-forgetting part in public affairs.

8. That individuality must be preserved at any cost — that each must live up to his ideals. That individuality which is strong may become fraternal; but that which is weak, never.

These eight propositions, which I am glad to admit are platitudes, may be condensed into one phrase — "artistic creative common sense" — or each one might be expanded into an evening's discourse or the study of a lifetime.

It is my conviction that architecture not only may become a living, art but that it *is* becoming—gradually and sometimes imperceptibly — a living art. It is my purpose to ask you this evening to search for the application of these principles, and the ideas of purpose, material, locality, precedent, style, sincerity, humility and courage, tone and rhythm, repose and sparkle, in the examples which I have here and upon which I ask you to concentrate your attention.

[The above headings of an extemporaneous discourse were read by Dwight H. Perkins, at the regular February meeting of the Illinois Chapter, A. I. A.

It was not possible to report the extemporaneous remarks of Mr. Perkins, which were mainly exemplifications of the eight principles enunciated by him. They were illustrated by reference to photographs of contemporaneous buildings, mostly in Chicago, about fifty in number, most of which have appeared in The Inland Architect. The method followed by Mr. Perkins was to invite criticisms from the members, calling upon them by name, and concluding with his own opinion in each case. Sometimes the designers of the buildings were called upon to criticise their own work. The discussion was continued at the regular March meeting, Mr. Perkins taking the lead. It was conducted in a very friendly spirit, and many of the members acknowledged that it had been of great profit to them.

The paper read by Mr. Wight in April, before the Chicago Architectural Club (printed in this issue), was partly in continuation of the symposium conducted by the Chapter, but rather addressed to architects commencing their careers.]

WIND PRESSURE IN ST. LOUIS TORNADO.

BY JULIUS BAIER, C.E.

THE great amount of destruction in the St. Louis tornado of May, 1896, was largely incidental to the fact that the storm passed over a section of a large and closely built city where there was much to destroy. A comparison of the destruction in detail shows that the storm was not more violent than numerous others that occur periodically, as the records of weather bureaus show, at the average rate of about three per annum. The wind pressures noted in this instance must therefore be considered average pressures for storms of this class.

The determination of the actual intensity of the pressures of the wind has hitherto involved much guesswork. The St. Louis tornado affords the first instance in which such a storm passed over and demolished engineering structures whose known stability made it possible to form some exact estimate of pressure which must have been exerted. The overturning of the masonry walls and pillars of the approach to the Eads Bridge required a pressure of at least 60 pounds per square foot. The overturning of the brick chimney (162 feet high and 10 to 16 feet in diameter) required a pressure of at least 90 pounds per square foot. As the dimensions and weights of these structures were accurately known, these results were obtained by very simple computations and are positive and definite. That is, the values of 60 pounds and 90 pounds per square foot respectively were absolutely the *least* pressures which could have caused the overthrow of these structures. The actual values were probably more. How much more it is impossible to tell.

All indications show that the force of the wind increased greatly with the distance above the ground. In the many houses only partly destroyed the damage was generally confined to the roof or upper stories. The buildings which suffered most were churches and schoolhouses, grain elevators, or other structures that projected up above the general level of the houses.

Another marked feature emphasized throughout the path of the storm was the rapid and continuous fluctuation in pressure due to the extremely irregular and gusty nature of the wind in such storms. The wind at such times assumes a violently agitated and turbulent condition as much unlike the steady velocity with which it is usually assumed to flow as the Niagara whirlpool is unlike the current of water in a quiet stream.

The great amount of destruction caused by the walls falling outward must be attributed largely to the weakness of ordinary brick walls against lateral pressure, especially from within. A very small expense for better anchorage of walls and roofs, and a more general observance of ordinary rules of good building construction (especially use of good mortar and filling all joints), would greatly reduce the amount of destruction and loss of property in such storms. An examination of the wreck of the framework (cast columns and steel floor beams) of some partially completed warehouse buildings developed among other points of interest the great superiority of riveted over bolted connections. While fully three-quarters of the bolts were broken in the fall of the material, only about ten per cent of the rivets failed under similar conditions.

A knowledge of wind pressures is of most importance to the architect when considered in reference to the construction of "sky scrapers." None of these were in the path of the tornado in St. Louis, and the probable effect of such a storm can only be deduced from the action of the wind on buildings using similar elements of construction. The very general failure of brick walls shows clearly that curtain or veneer walls and partitions might readily be destroyed, leaving the building to depend solely on the metal framework. Pressure of 60 pounds and 90 pounds would certainly call for careful wind bracing either by sway bracing or portals attached to columns that can resist bending.

A system of wind bracing proportioned for 30 pounds pressure with the factor of safety ordinarily used in good construction, should develop an ultimate strength sufficient to resist an actual pressure of from 75 to 90 pounds before failure. Such provision is certainly the least that will give reasonable assurance of safety against such storms as that of last year at St. Louis.

The great cost of these lofty structures and the many lives dependent upon them for safety, certainly justify and demand the comparatively small expenditure (a few per cent of total cost of the building), necessary for safety.

[The following extracts are taken from an illustrated paper by Mr. Baier, on "Wind Pressures in the St. Louis Tornado," read before the American Society of Civil Engineers, March 3, 1897.]

"A general inspection of the buildings brings out the following average characteristic features. The extreme force of the wind was generally confined to the upper stories and roofs. The intensity of this force must have been extremely variable, not only as exerted on adjacent properties, but on a single building. There was very general evidence of the destructive force being exerted from the inside. . . . .

"*Brick Chimney.*—The power plant of the Union Depot Electric Railway Company is located near the southwestern part of the area of maximum destruction. The effects of the storm at this place are indicative both of the extreme intensity of the wind pressure and of the sharp variations in this intensity in short distances. The chimney fell over toward the north on the engine and dynamo house, cutting it into two sections. The part toward the east was blown down and totally wrecked by the wind; the section on the west was almost entirely uninjured. The boiler house was unroofed and its walls partly destroyed; the car sheds were completely wrecked, while the machine shop was but slightly damaged. All these buildings were of the usual type of construction employed for such purposes, consisting merely of side walls and roof carried on posts or trusses. But a small part of the pressure exerted to overturn the chimney would have completely demolished every one of the buildings. It consisted of an outer shell built of selected, hard-burned dark red brick, laid in a mortar of equal proportions of one part Portland cement to two parts sand, and one part lime to two parts sand. The bricks were laid with push-joints under inspection, and all joints were well filled. The inner core was built of a ring of 4½-inch fireclay brick, reinforced in the lower section by a ring of hard-burned red brick. The firebrick were laid in fireclay. Each shell was finished at the top by a cast-iron cap 2 feet deep, of ½-inch metal, secured to the brickwork by bolts. The inner shell was separated from the outer by a varying distance; the dimensions on the drawing give this distance as a minimum of two inches at the top, and the same fifty feet below the top where the section changes. This annular space would probably vary somewhat in actual construction. The inner shell was stayed by brackets built into the outer shell at intervals of ten feet. There were six of these brackets on a level, each having a face of about 8 by 8 inches. The upper section of this chimney, about 110 feet high, was overturned by the wind. The portion left standing varied from 40 to 47 feet in height. With the exception of several vertical cracks it was in such good condition that after taking down about five feet of the brickwork, the chimney was rebuilt on the remaining section. . . . The change in section from 17½ inches to 13 inches thickness makes this a point of comparative weakness. This, taken in connection with all other facts, renders it probable that the chimney failed by the crushing of the brick masonry on the extreme leeward side just above the section, due to the concentration of pressure at that point, and overturned bodily. . . . . The preceding data and computations show that the wind must have exerted in this locality a force equivalent to a static pressure in excess of 85 to 91 pounds per square foot over an area of at least 14 feet wide by 110 feet high. The total material removed was 121 tons. . . . .

"*Mercantile Buildings.*—The damage wrought on some of the large and substantially constructed buildings, of which there were only a few in the path of the storm, will convey some further impression of the force of the wind, even if it cannot be estimated.

"A building of this type is 64 feet wide by 126 feet long and six stories high, built with heavy exterior walls and with standard mill construction on the interior. The full wall shown in the illustration faces west; the east face is similar in construction to the south front. The brickwork in the top story was 13 inches thick in the full wall, 17 inches in the pilasters between the windows, and was all laid in mortar of lime and Louisville cement. It was built three years ago, so that the mortar had ample time to set. The roof was constructed of a double thickness of planking with an air space filled with mineral wool, and was furnished with an extra heavy tar and gravel covering. It was carried on beams supported by 9 by 9 inch uprights, and would probably weigh about 20 to 25 pounds per square foot. The entire sixth-floor walls were demolished and the roof lifted and carried off by the wind, part of it failing on and crushing the one-story building immediately adjoining it on the west. The wind evidently blew

into the east windows and lifted the roof, as nearly all the posts, with the cast bearing plates still on top of them, were left standing in place.

"A second example of the damage done to a substantial building shows the south wall of the upper four stories blown ont by the difference in pressure of the air on the inside and the ontside of the building, the material of the walls all falling on the outside. The walls were 13 inches thick in the fifth and sixth stories, and 18 inches in the third and fourth stories; the pilasters which snpported the floor girders were 26 inches thick. The building was erected about eight years ago. With the exception of the parapet wall and a section of the upper story of the building, it sustained no other serious damage.

"Another instance of a brick wall blown out by a difference in pressure occnrred in the elevator building at one of the large brewery plants, a brick shell, constructed around the grain bins, having its walls stayed at intervals by slip anchors fastened to the sides of the wooden bins. The end wall, 13 inches thick, 40 feet wide, and about 75 feet high, was forced out its entire height. The brickwork in this case was laid in Portland cement mortar, and was of excellent quality. The débris showed large sections of brick masonry still bonded solidly together, the wall evidently breaking through the bricks as readily as at the joint.

"A gronp of three mercantile buildings in various stages of construction, are four stories and basement in height, about 110 feet wide by 250 feet long, situated end to end in one line, and partly separated by open courts. The outer walls are of heavy brick masonry; the interior consists of a skeleton framework of cast-iron colnmns and steel beams. The metal work was completed, except the beams of the outer panels of the upper floors, which were necessarily omitted nntil the walls were brought up to proper height. The framework of the building in the foreground, some 1,200 to 1,500 tons in weight, was completely wrecked by the storm. The building at the extreme end had the upper two or three stories wrecked, while the frame in the center building escaped uninjured. The floor plan of the building was of the customary design. It consisted of longitudinal girders of two 15-inch I-beams fastened together with the usual cast separators. The trimming joists were 15-inch I-beams, and the floor beams were 12-inch I-beams, coped and framed into the girders so as to be flush on top. In the outer panels a 15-inch I-tail trimmer, adjacent to the wall and framed into the 15-inch trimming joists opposite the column connections, carried the headers, which otherwise would have rested directly over the windows in the brick walls. All connections were made with standard 6 by 6 by $\frac{7}{16}$-inch connecting angles, with five holes in each leg, which came shop-riveted to the end of the 12-inch floor beams. The field connections to the girders at all interior points were necessarily made with long bolts; all connections in the onter panels adjacent to the wall were riveted, bolts and rivets being $\frac{3}{4}$-inch diameter. The cast columns were fastened to each other by four $\frac{3}{4}$-inch bolts through heavy flange lugs at each joint, the girders and beams being supported on brackets and bolted through their webs to vertical lugs cast on the columns.

"The details of the wreckage, representing, as they do, a drop test of full-size members on an nnusually large scale, present some points of interest in regard to the behavior of the material under extreme conditions that have a direct application to some details of customary practice in the steel framework of high buildings, and are, therefore, given at some length. The roof beams and girders which fell on top of the wreck were snbjected to no shock except that due to their own weight, and were nearly all in good condition. The floor beams on the various floors, being caught between falling colnmns and girders, were badly bent and twisted. The author was informed that a number of the beams had the flanges cracked, and he personally saw several beams broken off at the ends, the fracture beginning at the end of the coped top flange, and extending diagonally across the web and bottom flange. . . . .

"A striking fact noted throughout the work of clearing the wreck was the superiority of riveted over bolted connections when the joints are subjected to strains from bending, twisting or wrenching, such as they might be called on to resist in the column connections of a high bnilding. In most of the roof beam connections, and in some of the joints in the floor where the beams maintained their relative position, the bolts were good, bnt wherever the beams were twisted out of position, the bolts invariably failed. Fully two-thirds to three-fourths of all the bolted connections were either broken apart or so weakened that the beams conld be easily pulled apart. The riveted joints, on the other hand, made a much better showing. The floor beams of the outside panels of the first and second floors were nearly all in place, and the joints riveted at the time of the storm. These beams were canght beneath the falling material of the upper floors and were dragged down against the side wall in such a way as to twist most of the beams and girders out of line and position. Althongh these joints were thus subjected to the severest test of any in the structure, yet in nearly every instance they hung together and required the rivets to be cut out before the wreckage could be cleared. . .

"At various times during the clearing of the wreck the author made a detailed examination of forty-nine of these joints, containing a total of 735 rivets. As, on an average, at least three rivets out of the fifteen at each joint were strained in tension, there were 149 rivets in this nnmber that were pnt to a severe test. Fifteen of these rivets, or abont ten per cent of the number, were found with the heads off or broken in the body, and seven were noticed that had been elongated on one side as much as $\frac{3}{16}$ to $\frac{1}{4}$ inch. The maximnm number that failed at any one joint was three, and in every instance the rivets that were broken or excessively distorted were in the inner row. In three places the materiall had been so violently wrenched that both connecting angles were torn apart at the root of the angle, and the beams pulled entirely away from each other, and in two other instances one of the angles was torn apart; otherwise the girders hung together by the riveted joints in continuous sections. In no instance was a connecting angle torn entirely off from any beam to which it was riveted.

"The facts observed show conclusively:

"1. That for any twisting, wrenching or bending strain a $\frac{3}{4}$-inch rivet is far superior to the ordinary $\frac{3}{4}$-inch bolt.

"2. That the tension value of three $\frac{3}{4}$-inch steel rivets is sufficient to distort the web of a 15-inch, 41-pound I-beam $\frac{1}{2}$ inch out of line without failure of the rivets, and is also far in excess of the bending resistance of the metal in a $\frac{7}{16}$-inch connecting angle.

"3. That a tension strain transmitted across the root of an angle from one leg to the other will cause a bending and a distortion of the angle, and bring an eccentric tension strain on the nearest line of bolts or rivets, and that under such action, in an angle as light as $\frac{7}{16}$ inch, the second row of rivets will not act till the first row has failed.

"4. That an eccentric tension strain will readily cause a bolt to fail by bending or breaking in the thread, while the steel rivet will stand considerable distortion without failure.

"5. That well-riveted joints in steelwork will stand, even under jar and shock, an excessive amount of abuse and distortion before actually separating into individual pieces.

"These facts are entirely in accord with a theoretical analysis, and are recorded here because they are facts, and because they apply so directly to what might be called some of the 'units' of structural work.

"The rivet in tension has always been an object of suspicion and distrust; it would seem consistent to be eqnally discriminating against some other details often used; notably the bolt in tension, the diaphragm plate resisting thrust or tension, and the thin connecting angle nnder cross-tension strain. . . . ."

TEXT OF NEW YORK COMPETITION AGREEMENT.

THE following is a competition agreement entered into by a number of New York architects which is open for signatures, and which will probably largely influence future competitions in the East.

The undersigned architects being constantly invited by those not conversant with architectural practice to participate in competitions upon conditions with which it is impossible to comply—announce that they have mutually agreed that they will enter into competition npon the following terms only:

That in any case the undersigned shall be paid at least a sufficient sum to reimburse them for their cash outlay in preparing their competition drawings.

That in case of limited competition the number of competitors shall be definitely named and that the number shall not be increased without the consent of all competitors.

That it shall be definitely understood that the ordinary fees as published by the American Institute of Architects shall be paid as compensation for his professional services to the successful competitor.

That in work of any serious importance a professional advisor or advisors shall be appointed to act with the party instituting the competition in the preparation of a proper programme, which shall be definite in its specifications of requirements, and explicit in its statement of the drawings required, and their character, and of the various rules which shall govern the competition.

In the opinion of the undersigned it is very desirable that the professional advisor or advisors should be practicing architects; and the undersigned suggest that the best result can be gained by first appointing the architects to compete, and by inviting them to meet with the party instituting the competition, for the purpose of consultation with regard to the preparation of the programme of competition, and to nominate the professional advisor or advisors.

It shall be the duty of the professional advisor or advisors to examine all drawings submitted by the competitors, and to place out of competition any competitor who has not submitted his designs at the date fixed for their reception, or who presents details or models which are not called for, or whose drawings do not conform exactly in number and character with the requirements of the programme, and that if placed out of competition his plans shall receive no further consideration by the party instituting the competition.

Inasmuch as the object of a competition is to adopt the general motif of a design to be further elaborated, and to select an architect for the work rather than to secure plans perfectly studied in all of their details, the undersigned will enter npon no competition unless it shall be agreed that an award shall be made and that an architect shall be appointed on the consideration of the relative merits of the several schemes as shown by the drawings submitted, and that no demand shall be made for additional drawings or for a new competition.

The undersigned are of the opinion that all designs should be signed by their authors, and also that it is desirable that each competitor who has qualified by having his designs accepted by the professional advisor or advisors as complying with the terms of the competition, shall have an opportunity to personally explain his design to the party instituting the competition, in the presence of the professional advisor or advisors.

This has been signed by the following, up to this date:

George B. Post.	George Keister.
McKim, Mead & White.	Rossiter & Wright.
Bruce Price.	Carrere & Hastings.
Henry Rutgers Marshall.	Berg & Clark.
R. H. Robertson.	Renwick, Aspinwall & Owen.
H. J. Hardenbergh.	James Brown Lord.
R. W. Gibson.	Charles C. Haight.
Babb, Cook & Willard.	Clinton & Russell.
Edw H. Kendall.	R. H. Hunt.

A SECRET contract between persons proposing to bid upon the construction of public work, by which their bids are to be put in according to agreement with each other, with intention of getting as high a price as possible and dividing the profits is illegal, against public policy and void; though one of the parties did the work and got the money. McMullin *vs.* Hoffman, 69 Federal Reporter, 509.

ASSOCIATION NOTES.

THE NATIONAL SOCIETY OF MURAL PAINTERS.

The Mural Painters held their March meeting on March 30, the first vice-president in the chair.

Among the reports from the various committees, that from the Educational Committee claimed particular attention, as indicating the interest taken by many of the important art schools in receiving competent instruction regarding mural painting; and the aid of the society was promised to any school, whether here or in other parts of the United States, which would be desirous of adding this course of instruction to its present curriculum.

The question of exhibitions was also discussed, and the Mural Painters' contribution to the present International Exposition at Nashville was referred to. It was suggested that, if possible, joint action on the part of the various important societies throughout the United States be secured so that the dates of the various exhibits should not conflict, and that arrangements should be made to have the work transferred from one city to another. This would be a very wise and intelligent solution of the question which is brought up constantly by requests from various exhibits throughout the country.

The relation of the delegates to the Fine Arts Federation was also discussed, and as the new constitution was now in force it was arranged to have one delegate dropped each year and one alternate promoted to the rank of delegate, and a new alternate appointed to fill the vacancy.

In regard to the question of the tariff, as it was already being discussed by the Fine Arts Federation, and as there was such a diversity of opinion among the members, the society would give no definite instructions to its delegates, but left them to act as they individually thought wisest.

Reference was made to the annual diuner, to be held on the evening of April 20 at the rooms of the Arena, and the vice-president expressed a hope that there would be a large attendance of members, as a number of guests, representatives from other societies in New York, Philadelphia, Boston, Cincinnati, etc., had already been invited.

The society held its annual dinner Tuesday evening, April 20, in a special parlor at the Arena, the honorary president, Mr. John Lafarge, and the first vice-president, Mr. Frederic Crowninshield, who acted as master of ceremonies, occupying respectively the opposite ends of the table.

A large number of invited guests of the kindred professions of architecture and sculpture, as well as the art of letters, were present, and under the deft leadership of Mr. Crowninshield, after the coffee and cigars had arrived, many informal speeches were made. With a few introductory remarks in regard to the mural painters and their work, Mr. Crowninshield spoke of the "Lazarus Scholarship" of mural painting and a letter he had just received from Mr. Breck, the first beneficiary, who has but recently taken up his residence in Rome.

He then introduced the honorary president, who spoke forcibly of the question of the American artist's point of view and his distinct and legitimate right to it. He was followed by Mr. W. W. Taylor, president of the Municipal Art Society, of Cincinnati, whose society has just undertaken the decoration in part of the City Hall, of that city, the prize drawings for which, by Mr. Otto W. Beck, were hung as part of the decorations of the room.

Mr. Taylor was in turn followed by Messrs. Walter Cook, George B. Post, Frank Miles Day, of Philadelphia, C. Howard Walker, of Boston, Prof. W. R. Ware, Henry Rutgers Marshall, J. Q. A. Ward, F. S. Lamb and Edward Simmons, representatives of the various professions forming the allied arts, all of whom spoke in the interest of the "unity of the work," whether from the point of view of the mural painter, the sculptor or the architect.

CHICAGO ARCHITECTURAL CLUB.

On April 19 Peter B. Wight, architect, read a paper before the Chicago Architectural Club on "The Fundamentals of the Development of Style." This was the last regular meeting of the club in its old quarters, the club having been admitted to membership in the Chicago Art Institute.

EDINBURGH ARCHITECTURAL ASSOCIATION.

Under the leadership of Mr. Hippolyte Blanc, R.S.A., the members of this Association, on April 3, visited Niddry and Duntarvie castles. The former, situated in Kirkliston parish, Mr. Blanc described as a fair example of an early keep, one showing the first development from the simple square tower. The doorway in the inner angle enters upon a circular staircase leading to the several floors, now in ruin. The walls average nine feet thick. The foundation of the tower was ascribed to George, fourth Lord Seton, probably in the last quarter of the fifteenth century. The castle receives prominence in history as having in 1568 afforded shelter and protection to Queen Mary. During the troublous times of Charles I. and Charles II. the castle and lands passed to the family of Hopetoun, the castle giving the title of Baron Niddry to Lord Hopetoun. Duntarvie Castle, situated in Abercorn parish, Mr. Blanc explained, was a residential manor house of about oue hundred years later date than Niddry. It presents a large rectangular building, eighty feet long, facing south, with projecting wings at the extremes on the north side. This castle was in marked contrast to Niddry, the walls being so much thinner. There was much evidence to associate the period of foundation with the end of the sixteenth or beginning of the seventeenth century. The castle continued habitable until quite recently, and is now in ruin. Mr. Blanc was heartily thanked for his contributions.

PHILADELPHIA T-SQUARE CLUB.

At the aunual meeting of the T-Square Club, held Wednesday evening, May 5, 1897, the following officers were elected for the ensuing year:

President, David Knickerbacker Boyd; vice-president, Edgar V. Seeler; secretary, George B. Page; treasurer, Horace H. Burrell. These officers, together with Walter Cope, Louis C. Hickman and Charles Z. Klauder, comprise the executive committee.

House Committee — Adin B. Lacey, chairman; Charles E. Oelschlager and Percy Ash.

In the regular monthly competition, entitled "Farmstead," first mention was awarded Lloyd Titus.

DETROIT ARCHITECTURAL SKETCH CLUB.

At the semi-annual meeting of the Detroit Architectural Sketch Club, held on April 26, 1897, the following officers were elected: Alexander Blumberg, secretary, vice Edward A. Schilling; Augustus O'Dell and John A. Gillard, directors, vice Alexander Blumberg and M. S. Willcox.

During the winter a series of practical talks were given which proved beneficial to the members. A modeling class had been organized and fair progress made. The water-color class will soon begin their outdoor summer sketching on Saturday afternoons.

CORNELL COLLEGE OF ARCHITECTURE.

President Schurman, of Cornell University, has aunounced that he did not at preseut expect to nominate any candidate for the position of director of the College of Architecture, which becomes vacant in June through the resignation of Professor Babcock. On the other hand, he stated that it was intended to strengthen the Faculty of Architecture, and two additions have just been made. Alexander B. Trowbridge has been recommended by the executive committee to the full board for appointment at the June meeting as professor of architecture. Mr. Trowbridge took the degree of D. S. in architecture in 1890 at Cornell University. The next three years he worked in architects' offices in Boston, then he went to Europe, where he spent two years in study, the latter part of the time in Paris. On returning to this country in 1895, he settled down to the practice of his profession in Detroit, forming a partnership in the well-kuown firm of Nettletown, Kahn & Trowbridge. The other appointee to the Cornell Faculty of Architecture is John V. Van Pelt, who cabled President Schurman his acceptance on April 28 from Paris. Mr. Van Pelt is a Southerner who has had a prolonged and thorough success in the École des Beaux Arts, Paris. After seven years of work aud study in the École, he received his diploma two years ago, and since that time he has remained there doing special work. Mr. Van Pelt's work at the École has won him a very high reputation both among Frenchmen and Americans. His chair in Cornell University will be that of Architectural Planning and Designing, subjects of which he has made a specialty.

NEW PUBLICATIONS.

THE AMERICAN RADIATOR COMPANY'S CATALOGUE. Architects' Edition.

The most perfect specimen of printing and binding that has come to our editorial table in years is the descriptive and illustrated volume of the American Radiator Company, of which we have to acknowledge the receipt of the 213th impression. This is saying a great deal. But when a successful manufacturing house celebrates its well-earned success by the encouragement it offers to the printers and binders to put forth their best efforts, and produce the best that they can do, the result is something more than a mere advertisement. This success is not due to any brilliant or bizarre effects but to simple good taste, and as perfect mechanical work as the arts of illustrating printing and binding have yet been able to produce. This latter feature is the work of The H. O. Shepard Company, of Chicago, and as printers of this handsome volume they cannot be too strongly commended for the superb quality of the work. In addition to the half-tone pictures the illustrations of the "Verona" radiator are photogravures printed on linen paper. But this fine setting would be out of place if the subject matter were not of equal importance. Manufacturing companies do not always produce things of beauty. Time was wheu a steam radiator was regarded as one of the hideous necessities for human comfort, and we always submitted to its presence with protest agaiust its unsightliness. When a manufacturer tries to lift his product out of the depths of artistic iniquity and redeem its reputation as an instrument of torture in a chamber of horrors, he is entitled to the sincere gratitude of the community. It is not saying too much to state that even the simplest and cheapest patterns of the American Radiator Company are ornamented with due regard to the requirements of good taste. But in the most elaborate products of their foundries they have not "overstepped the bounds of modesty," and their best products are characterized by a refinement of design which is not carried beyond the possibilities of the latest improvements in the art of iron casting. No one could claim that their "Verona" radiator is an eyesore. In other respects this volume is full of

valnable information and will be an important addition to every architect's library. The architects' edition is printed on heavy paper and bound with cnshioned sides and each volume is nnnibered as it leaves the press. It may be interesting to the fortunate recipients of this edition de lnxe that is the culmination of the artistic nse of printers' ink, with which architects have become familiar in the advertising matter issned by the American Radiator Company, that its snperior character is due to Mr. Lonis Bruch of that company.

MOSAICS.

J. M. LYON & Co., of Chicago, have taken the agency for the Venable Brothers, whose quarries, located at Stone Mountain and Lithonia, Georgia, are among the largest in the United States, and produce a very fine grade of light gray granite. A granite vault cover, 15 by 13 by 2 feet 6 inches, is to be delivered in Chicago in one piece. It will contain abont 500 cubic feet, and weigh nearly 100,000 ponnds. The dimensions were such as to occasion great difficulty in getting transportation, but arrangements were finally consnmmated with the engineers of the several railroads and J. M. Lyon & Co., of this city, contracted to deliver the stone from the granite quarries of Venable Brothers, Stone Mountain, Georgia.

OBITUARY.

WILLIAM S. FRASER, ARCHITECT.

William S. Fraser died April 27 at his home in Pittsburg, Pennsylvania. Mr. Fraser was one of the foremost architects of the city, and a man whose social as well as his exceptional mental and professional traits rendered him among the most popular and successful residents of Pittsburg. He was born in Wellsville, Ohio, Jnly 19, 1852. His father was a prominent contractor there. He became devoted to architecture when a boy, and at seventeen years of age went to New York, where he stndied under several of the prominent architects of that time, also attending the Cooper Institute. After five years' residence in New York he sailed for England to become a pnpil of William Burgess, and while there also stndied at the Royal Academy Architectural School, where he received a medal. His vacations during these years were spent on the continent. He opened an office in Pittsburg in 1879 and soon became recognized as one of the leading members of his profession in western Pennsylvania. His taste, originality and skill find embodiment in some of the finest business honses, private residences and churches hereabouts. Mr. Fraser married Ella May Elkins, daughter of Col. G. W. Elkins. He is survived by a widow and son. The deceased was a leading member of the Sixth United Presbyterian church and a prominent working member of the Young Men's Christian Association. Mr. Fraser was a man of exceptional Christian character as well as intellectual gifts and artistic taste.

OUR ILLUSTRATIONS.

"The Wayside Inn," Scarsdale, New York. E. Eldon Deane, del.

School Building for Riverside, Illinois. Charles F. Whittlesey, architect, Chicago.

The Old "Van Cortlandt" Manor House, Croton, New York. E. Eldon Deane, del.

Stable Building, for W. G. Irwin, Honolnlu, Hawaiian Islands. Ripley & Dickey, architects.

Design for New University Club Building, New York City. McKim, Mead & White, architects.

Second Premiated Design for Proposed New Municipal Building for New York City. Snbmitted in competition by P. J. Weber, architect, Chicago.

Illustrated snpplement of Illinois Trust and Savings Bank Building, Chicago. D. H. Burnham & Co., architects. Nnmerous half-tone cuts of details and a double sheet of photogravure plates are shown.

The new Corcoran Gallery of Art, Washington, D. C. Ernest Flagg, architect, New York.

The location of the new Corcoran Gallery of Art, nnlike the old one, is somewhat seclnded; in order to reach it one mnst make a pilgrimage from the main thoroughfare. It stands on the west side of Seventeenth street below the Army and Navy Building, and overlooking what is known as the "white lot," a government reservation forming a part of the grounds attached to the President's house. The general plan of the building is in the form of an irregular quadrangle having a frontage of two hnndred and seventy odd feet on Seventeenth street, about one hundred and sixty feet on New York avenue, and somewhat less on E street. The bnilding is composed of several attached pavilions surronnding a central hall; the chief of these is on Seventeenth street. It is about 150 feet long and 35 feet deep, and has two stories and a basement. The latter is of granite, boldly rusticated; the two stories above are of marble of admirable workmanship. The roof is of glass and copper. The main entrance is in the center of the block, and the doorway is flanked by pedestals, one on each side, npon which are to be placed bronze statnes representing Scnlpture and Painting; and there are two large bronze lions, one at either side of the steps.

The first story has a very slight batter, and is composed of blocks of marble with channeled joints. This masonry with its narrow bonding courses resembles the wall of the cella of the Temple of Vesta at Rome. It is pierced at regular intervals by ten windows with deep reveals, and having bronze claustra, which add much to their beauty. The central doorway has a rich architrave with a sculptured tympanum supported by consoles. The doors are of oak, overlaid with bronze, and have deep caissons. In the lower ones are two massive lions' heads with rings, which serve as handles.

The second story is uniqne. It consists of a perfectly plain band, of marble blocks, about twelve feet high, extending without a break for more than 150 feet. The stone for this portion seems to have been selected with the greatest care, and it is certainly a very beautiful piece of masonry. Above it is a band course with triglyphs supporting a continnous plinth npon which stand short pilasters or sqnare columns, channeled, between which are sqnare panels filled in with marble slabs, pierced, to form clanstra. These clanstra with their projecting knobs at the intersection of the bars, cut back ont of the solid, are worthy of notice as an admirable bit of stone cntting. Upon the pilasters rests a secondary architrave, and consoles snpporting the architrave of the crowning entablatnre. The corners of this story are fortified by broad piers, npon each of which is a sculptnred shield with palm branches and laurel. The line of the main architrave above each of the piers is broken by a boldly projecting Minerva's head with helmet. The frieze contains a rincean at either end, between which are incised the names of representative artists of different conntries. The cornice, like all other profiles, is strong and simple. It is crowned by a sculptured chenean of very rich design. The copper ribs of the roof are terminated by small antifixes. The roof is hipped, the ridge is enriched by a cresting of copper terminated by seated chimeres.

This main pavilion is flanked by two wings of lesser height, whose main cornices line with the band of triglyphs mentioned above. These roofs, like that of the central portion, are of glass. The semi-circular lecture hall has been placed at the corner of New York avenue and Seventeenth street, which forms an acnte angle. The disagreeable lines which often occur in such cases have been overcome here by rounding the corner, for which the hemicycle forms the excuse. The wall is unpierced on either floor and the second story is ornamented by niches and pilasters of slight projection. The pavilion on New York avenue is occnpied by the schools, as is indicated by the exterior. The treatment here is qnite different, though in entire harmony with the rest, for the wall is pierced by large openings for the stndios. An entrance on this street serves for the hemicycle and schools.

Upon entering the bnilding by the main doorway one finds himself in a spacious vestibule of stone, decorated at each end by a monnmental niche with pediment. Directly in front of him and raised by several steps is the atrium, with its rows of colnmns, forming a noble approach to the main stairs over a hnndred feet distant; the first run of steps directly opposite the entrance leads to a broad landing half way up, from which the stairs return in two flights to the gallery floor. The atrium, which occupies the central portion of the building, is an apartment abont 60 feet wide and 150 feet long. It contains eighty stone columns about twenty feet high, in two tiers, the lower one supporting a balcony about twelve feet wide at the level of the second floor. The galleries snrrondd the atrium, and as most of them communicate with each other as well as with the balcony, the circnlation is good even when the bnilding is crowded, as it was the opening night, when more than four thousand people were present. There are eight picture galleries on the second floor, which in general measure about 30 by 60 feet.

The lighting throughout is remarkably good. Pretty mnch of the whole roof is glass, so that both galleries and the atrium are flooded with light.

On the gronnd floor most of the space nnder the picture gallery above is nsed for sculpture, but the rooms on the Seventeenth street side north of the main vestibnle are nsed for the offices of the administration; they consist of a reception room, library and board room. The finest room of the building, if we except the atrinm, is the semicircular lecture hall or hemicycle, which occnpies the northeast corner of the bnilding; its dimensions are abont 65 feet wide, 40 feet deep and 50 feet high. The seats are arranged in ascending tiers. The room is lighted from above, and the interior is decorated, like the exterior, with pilasters and niches. The ceiling is coved and there is a large cartonche over the prosceninm. The portion of the bnilding devoted to the schools adjoins the amphitheatre, which will, it is expected, be nsed for lectures npon art. There are three floors of stndios for pnpils upon the north side, and several fine rooms in the basement are to be nsed by classes in drawing.

PHOTOGRAVURE PLATES.

Issued only with the Photogravure Edition.

House, Philadelphia. Frank Miles Day & Bro., architects.

Carriage Warehouse, Philadelphia. Cope & Stewardson, architects.

St. Clement's P. E. Chnrch, Philadelphia. John Nottman, architect.

Dwelling, for H. La Barre Jayne, Philadelphia. Wilson Eyre, Jr., architect.

Warehonse, for Charles C. Harrison, Philadelphia. Cope & Stewardson, architects.

Philadelphia & Reading Railway Terminal Station, Philadelphia. Francis H. Kimball, New York; Wilson Bros., Philadelphia, associated architects.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Chicago, Ill.—Architect V. W. Coddington: Making plans for a three-story store and flat building, 25 by 74 feet in size; to be erected at Sixty-first and Halsted streets. The front will be of buff Bedford stone, the interior to be finished in oak and have the modern sanitary improvements, steam heating, gas fixtures, mantels, sideboards, electric bells, etc. For Edward Brady, a three-story residence, to be erected at 8 Oakland crescent; to be of blue Bedford stone front, slate or tile roof, hardwood interior finish, mantels, sideboards and consoles, furnace, gas and electric fixtures, gas ranges, etc.

Architects Hessenmueller & Meldahl: For Thomas O'Neill, a two-story and basement flat building, to be erected at Drexel avenue and Sixty-fifth street. It will have a stone front, gas and electric fixtures, mantels, sideboards, furnaces, gas ranges, electric bells, speaking tubes, cement basement. For George W. Conover, a three-story and basement apartment building, 50 by 131 feet in size; to be erected at the corner of Prairie avenue and Forty-fourth street. It will have two fronts of buff pressed brick, trimmed with buff Bedford stone, the interior to be finished in oak and pine, have the best of modern conveniences, steam heating, gas and electric fixtures, mantels, sideboards and consoles, gas ranges, fireplaces, cement basement, etc.

Architect Fredcrick Ahlschlager: For Jacob Rinbach, a two story and basement building, to be erected at Hammond; to be of pressed brick and stone front, have hardwood finish, etc. For Thomas Porter, a two-story and basement flat building; to be erected at 1364 Talman avenue; to have a front of pressed brick with buff Bedford stone trimmings, oak finish, furnaces, gas fixtures, mantels, sideboards, bells, speaking tubes, etc. For Henry Rothe, a two-story, basement and attic residence, 30 by 54 feet in size; to be erected at Tinley Park; to be of frame with stone basement, have hardwood finish, hot-water heating, mantels, sideboards, etc. Also made plans for a church, 53 by 98 feet in size; to be erected at Irving Park avenue and Paulina street; to be of pressed brick and stone, have slate roof, copper cornice and gutters, Georgia pine interior finish, gas and electric fixtures, plumbing, steam heating, cement sidewalks, basement, etc.

Architect W. M. Walter: For M. Hitchcock a two-story, basement and attic frame residence, 32 by 54 feet in size; to be erected at Wilmette; to have a stone basement, hardwood finish, furnace, gas fixtures, mantels, sideboards, etc. For L. C. Wood, a two-story, basement and attic residence, 32 by 58 feet in size; to be erected at Edgewater; to be of buff pressed brick and stone front, have open plumbing, gas and electric fixtures, furnace, mantels, sideboards, consoles, nickel-plated plumbing, etc. For Mr X, at Argyle Park, a handsome two-story, basement and attic residence, 35 by 55 feet in size; to be constructed of gray pressed brick with stone trimmings, have interior finished in hardwoods, mantels, furnace, gas and electric fixtures sideboards, gas ranges, etc.

Architect H. L. Ottenheimer: For M. C. Spier, remodeling residence at 3743 Vernon avenue, new plumbing, hot-water heating, gas and electric fixtures, mantels, sideboards, consoles, gas ranges and fireplaces, hardwood finish, etc. For D. T. Sullivan, a two-story flat building; to be erected at Langley avenue and Sixty-sixth street; to have a Bedford stone front, hardwood finish, gas fixtures, mantels, sideboards, steam heating, gas ranges, electric bells and speaking tubes, etc.

Architects Flanders & Zimmerman: For M. Gross, a handsome Colonial residence, 40 by 60 feet in size; to be erected at Evanston; it will be of stone foundation and frame above, have hardwood interior finish, electric light, etc.

Architects Church & Jobson: For C De Berry, a two-story, basement and attic frame residence, 28 by 25 feet in size; to be erected at Edgewater; to have a stone basement, hardwood interior finish, mantels, sideboards, gas fixtures, etc.

Architect S. N. Crowen: For I. Iverson, a three-story flat building, 25 by 90 feet in size; to be erected at Forty-second place near Jackson boulevard; to be of buff Bedford stone front, oak interior finish, gas and electric fixtures, furnaces, mantels, sideboards, etc.

Architects J. F. & J. P. Doerr: For B. Niggemeyer, a three-story residence, 25 by 70 feet in size; to be erected at 4120 Grand boulevard; it will have a brownstone front, slate and tile roof, all hardwood interior finish, mantels, gas fixtures, nickel-plated plumbing, sideboards, consoles, electric bells and speaking tubes, steam heating, electric light, etc.

Architects Handy & Cady: For W. H. Heegard & Co., remodeling four-story building northwest corner of State and Lake streets; will put in new plumbing, elevator, steam heating, electric light, etc. For E. M. Fuller, a two-story store and office building, 81 by 90 feet in size; to have a front of pressed brick and terra cotta, steam heating, plumbing, electric light, etc.

Architect J. T. Fortin: Making plans for a two-story and basement store and flat building; to be erected at Forty-eighth street and Lexington avenue; to have a stone front, copper bay and cornice, gas and electric fixtures, mantels, sideboards, the modern plumbing, steam heating, gas ranges, etc. For S. Cooms, a two-story flat building; to be erected at Flournoy street near California avenue; to be of buff Bedford stone front, have modern plumbing, gas fixtures, furnaces, gas ranges, laundry fixtures, mantels, etc. For V. Centaro, a three-story and basement flat building; to be erected at Ohio street; it will be of pressed brick and stone front, galvanized iron bays and cornice, have modern plumbing, gas fixtures, furnaces, mantels, sideboards, gas ranges and fireplaces, cement work, etc.

Architect George W. Maher: For D. G. Miller, a two-story, basement and attic residence, 32 by 55 feet in size; to be erected at Buena Park; it will be of frame with stone basement, have hardwood finish, gas and electric fixtures, mantels, sideboards, etc.

Architects Stiles & Stone: For F. Ransford, two four-story apartment houses, 50 by 79 feet in size; to be erected at Washington avenue; they will have buff Bedford stone fronts, hardwood interior finish, mantels, sideboards, gas and electric fixtures, steam heating, electric light, gas ranges, etc. Also two-story residence, 26 by 56 feet in size; to be built at Bryn Mawr; first story to be of pressed brick and the rest of frame; have fine hardwood finish, special mantels, sideboards, consoles and hall trees, gas and electric fixtures, gas ranges and fireplaces, hot-water heating, electric light, etc. Also church, 50 by 118 feet in size; to be erected at Seventieth street and Stewart avenue; to be of pressed brick with terra cotta trimmings, have slate roof, oak finish, steam heating, electric light, etc.

Architects Wilson & Marshall: For H. M. Wilcox, a three-story and basement apartment house, 50 by 80 feet in size; to be erected at Forty-seventh street and Lake avenue; it will have a front of buff Bedford stone, hardwood finish, gas and electric fixtures, mantels, sideboards consoles and hall trees, electric light, tile bathrooms, steam heating, electric light, laundry fixtures and driers, gas ranges, etc.; cost about $20,000.

Architects Benes & Kutsche: For James Reynolds, a three-story building, 25 by 90 feet in size; to be erected at 415 Clark street; to be of pressed brick and stone front, have plumbing, etc. Also making plans for two-story, eight-room school, to be erected at Hoopston, Illinois; to be of brick and stone, have slate roof, plumbing, etc.

Architect W. L. Klewer: For F. H. Herdrick, two-story, basement and attic residence, 28 by 50 feet in size; to be built at Kenmore avenue near Lawrence avenue, Ravenswood; to be of frame with stone basement, have hardwood finish, gas and electric fixtures, special mantels, sideboards and consoles, all modern open plumbing, furnace, electric light, etc.

Architect G. L. Harvey: For George W. Henry, a two-story, basement and attic frame residence, 50 by 60 feet in size; to have a stone basement, hardwood interior finish, specially designed mantels, sideboards, hall trees and consoles, the best of modern sanitary conveniences, hot-water heating, electric light, etc. Also two-story stable, 35 by 60 feet in size.

Architects McMichaels, Morehouse & Brinkman: For H. G. Conine, a two-story, basement and attic residence, 37 by 53 feet in size; to be erected at Edgewater; it will be of frame with stone basement, have hardwood finish, mantels, sideboards, consoles, open nickel-plated plumbing, gas and electric fixtures, heating, laundry fixtures, gas ranges, etc. For H. Halliman, a two-story and basement flat, to be erected at Fifty-fifth street boulevard and La Salle street; it will be of pressed brick and stone front, have gravel roof, oak interior finish, mantels, gas fixtures, sideboards, laundry fixtures, electric bells, speaking tubes, etc.

Architect M. E. Bell: Has completed drawings for the two-story, basement and attic High School, 80 by 136 feet in size; to be erected at Cairo, Illinois; it will be of pressed brick and stone, with slate roof, have oak interior finish, the best of modern sanitary improvements and ventilation, steam heating, electric light, cement basement, sidewalks, etc.

Architects Simpson & Mueller: For C. W. Hoff, two two-story, basement and attic residences, semi-detached, 42 by 52 feet in size; to be erected at Sixty-fifth street and Myrtle avenue; they will have handsome fronts of buff Bedford stone, oak finish, gas and electric fixtures, the best of open nickel-plated plumbing, gas ranges and fireplaces, furnaces, special mantels, sideboards and consoles, electric bells, etc.

Architect Samuel A. Treat: For A. E. Kent, two-story store and hall building, 83 by 130 feet in size; to be erected at the corner of Forty-third street and Calumet avenue; to be of pressed brick with terra cotta trimmings, have hardwood interior finish, the modern sanitary improvements, steam heating, electric light, etc.

Architects Jennings & Ross: For Messrs. Fisher & Meyer, two two-story, basement and attic residences, semi-detached, 36 by 68 feet in size; to be erected at River Forest; they will be of frame with stone basements, have oak and yellow pine interior finish, electric light, the best of modern plumbing, hot-water heating, mantels, sideboards, consoles, etc.

Architect Jarvis Hunt: Starting work on the two-story Old Colonial residence, 100 by 28 feet in size, at Wheaton, for Charles B. McDonald; it will be constructed of frame beams and plaster, have elegant hardwood interior finish, specially designed mantels, sideboards, consoles and hall trees, electric light, hot-water heating, the best of open nickel-plated plumbing, etc.

Architects Hodgkins & Barrows: For L. J. McCormick, remodeling five-story building, 138 by 169 feet in size, corner of Wabash avenue and Randolph street; will put in steel beams and columns, new modern plumbing, electric light, steam heating, elevators, marble work, etc.

Architect Henry Newhonse: For F. P. Burket, a four-story and basement apartment house, 50 by 127 feet in size; to be erected at 944-946 Fifty-fifth place; the front will be of pressed brick with buff Bedford stone trimmings, the interior to be oak finish, have the modern sanitary improvements, gas fixtures, steam heating, electric light, mantels, sideboards, etc.

Architects Bright & Burfeind: Making plans for German Evangelical Lutheran Church, 42 by 77 feet in size; to be erected at Lombard, Illinois; it will be of frame construction with stone basement, have stained glass windows, pews, oak finish, etc.

Architects Murphy & Camp: For Miss Murphy, a three-story and basement flat building, to be erected at Prairie avenue and Forty-seventh street; the front will be of buff Bedford stone, the interior to be finished in quartered oak, have the best of nickel-plated plumbing, steam heating, gas and electric fixtures, mantels sideboards, consoles and hall trees, electric bells and speaking tubes, electric light, laundry fixtures, etc.

Architect Charles S. Frost: For B. Kuppenheimer, a two-story, basement and attic residence, 32 by 61 feet in size; to be erected at Michigan avenue; it will have a handsome stone front, Spanish tile roof, very fine hardwood interior finish, mantels, sideboards, consoles and hall trees, the best of nickel-plated plumbing, gas and electric fixtures, electric light, etc.

Architects Perkins & Kranse: For Dr. J. E. Best, a two-story, basement and attic residence, 42 by 60 feet in size; to be erected at Arlington Heights; it will be of frame with stone cement, have hardwood finish, mantels, sideboards, the modern sanitary improvements, electric fixtures, steam heating, laundry fixtures, etc.

Architect F B. Townsend: For Thomas Gahan, a three-story and basement apartment building, 50 by 79 feet in size; to be erected at 4734 Prairie avenue; to be of pressed brick and stone front, have slate mansard, oak interior finish, the best of open plumbing, gas and electric fixtures, mantels, sideboards, consoles, hall trees, electric bells and speaking tubes, steam heating, electric light, gas ranges, etc,

Architect W. J. Van Keuren: For A. D. Osborn, a two-story, basement and attic frame residence, 36 by 52 feet in size; to be erected at Woodstock, Illinois; to have stone basement, interior to be finished in quarter-sawed oak, have the best of sanitary improvements, gas and electric fixtures, hot-water heating, mantels, sideboards, consoles, hall trees, gas machine, etc.

Architects Dwen & White: For M. Davis, two two-story flats and stores, 20 by 80 feet in size each; to be erected at Cottage Grove avenue near Thirty-fifth street; they will have buff Bedford stone fronts, oak finish, mantels, sideboards, gas fixtures, ranges, etc.

Architect Charles S. Frost: For Chicago & North-Western Railway Company, a three-story and basement Y. M. C. A. building, 82 by 84 feet in size; to be erected at West Forty-first street; it will be constructed of buff pressed brick with stone trimmings, have hardwood finish, gas and electric fixtures, modern plumbing, steam heating, electric light, etc. Also making plans for a three-story residence, 38 by 50 feet in size; to be erected at Ellis avenue near Forty-ninth street; to be of pressed brick and stone front, have Spanish tile roof, fine hardwood interior finish, specially designed mantels, sideboards, consoles, hall trees, the best of nickel-plated plumbing, etc,

Architect John D. Atchison: For Mrs. Julia Clark, a two-story flat building, 25 by 60 feet in size; to be built at 910 Bonney avenue; it will be of Bedford stone, have oak finish, mantels, sideboards, gas fixtures, heating, etc.

Denver, Colo.—Architect F. E. Kidder: For A. Smith, two-story double dwelling, brick; size 50 by 55 feet; cost $6,000. For Charles Denison, three-story office building, brick; size 50 by 125 feet; cost $12,000.

Edbrooke Architectural Company: For Mrs. P. Schafer, three-story office building, brick; size 75 by 65 feet; cost $10,000. For Denver Investment Company, two-story dwelling, brick; size 32 by 36 feet; cost $5,000. For T. J. Cox, two-story dwelling, brick; size 25 by 35 feet; cost $5,000. For Rev. R. E. Sykes, two and one-half story dwelling, brick; size 45 by 53 feet; cost $10,000. For Fred H. Laesch, two-story dwelling, brick; size 36 by 40 feet; cost $5,000. For George A. Smith, two-story dwelling, brick; size 28 by 50 feet; cost $10,000. For E. W. Williams, three-story clubhouse (Denver Wheel Club), brick; size 50 by 125 feet; cost $15,000. For M. M. Burns, two and one-half story dwelling, brick; size 30 by 40 feet; cost $5,000. For F. O. Vaille, addition to two-story business building, brick; size 68 by 125 feet; cost $5,000. For Jno. Dore Plow Company three-story warehouse, brick; size 75 by 100 feet; cost $5,000. For S. M. Perry, two-story stores, brick; size, 65 by 100 feet; cost $5,000. For Ralph M. Baum, two-story dwelling, brick; size, 38 by 43 feet; cost $5,000. For Denver Improvement Company, two-story dwelling, brick; size, 38 by 41 feet; cost $7,000. For H. L. Emerson, one-story 6-house terrace, brick; size, 45 by 125 feet; cost $5,000. For J. W. Hampton, two-and-one-half story dwelling, brick; size, 32 by 48 feet; cost $5,000. For C. M. Kellogg, two-and-one-half-story dwelling, brick; size, 26 by 43 feet; cost $6,000.

Architect William Quayle: For B. A. Watkins, two-story dwelling, brick; size 42 by 48 feet; cost $9,000.

Architects Warran & Nortou: For W. S. Cheesman, seven one-story stores, brick; size, 100 by 125 feet; cost $8,000.

Architects Varien & Sterner: For Oaks Home Company, consumptives' home, three stories, brick; size, 43 by 82 feet; cost $16,000.

Architect F. S. Snell: For Reutta Van Schaack, two-story dwelling, brick; size, 29 by 44 feet; cost $7,500. For Sisters of St. Francis, orphans' home, four-stories, brick; size, 43 by 98 feet; cost $10,500. For J. S. Flower, two-story dwelling, brick; size, 34 by 40 feet; cost 5,000.

Hamilton, Ohio.—Architect George Barkman reports the following of his work: An eight-room schoolhouse for the city of Hamilton; common and pressed brick, sandstone trimmings; hot-air heat, flush closets, slate blackboards, slate and tin roof, cement work, iron and steel; cost $16,000; contract to be let May 17 at noon. Remodeling the residence of the Hon. J. F. Neilan, at a cost of $3.000; common brick, tin roof gas and electric fixtures, steam heat, sandstone trimmings, mantels and grates. Residence of F. J. Straub; to be of frame, slate roof, gas and electrical work, dumb waiter, laundry fixtures, etc.; cost $4,580. Remodeling the second floor of the Butler County courthouse; hard plaster, white walnut finish, gas fixtures, fresco work.

SPECIAL SUPPLEMENT.

THE INLAND ARCHITECT AND NEWS RECORD

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TECHNICAL REVIEW, THE ILLINOIS TRUST AND SAVINGS BANK, CHICAGO.

THE MOST UNIQUE AND COMPLETE BANKING BUILDING IN AMERICA.

COMMERCE once again bows to architecture. In one conspicuous instance at least they two have met on an equality and have joined hands in a work of art and beauty which is destined to be admired and praised through all the coming century. Without sacrificing the least utility, without losing any commercial advantage, either of profit from land rentals or of interest on structural investment, a building has been erected in the heart of a great city for strictly business purposes, which is as imposing as an ancient Greek temple and architecturally as perfect as though no limitation of space nor requirements of an ultra commercial age had influenced its proportions.

With the closing of the Grand Pacific Hotel a difficult problem was presented for solution to the Rev. Dr. Robert D. Sheppard, treasurer and business agent of Northwestern University, to whom the ground belonged. The site must be utilized in such a manner as to assure to the University an adequate income for a long term of years. Various negotiations were entered into until finally the directors of the Illinois Trust and Savings Bank, desirous of securing a permanent location for their rapidly expanding institution, made the proposition which has resulted in the erection of this, the most palatial bank home in the world.

The bank required that, within a certain limit of expense, the building should be such as it would desire if it were its own. Accordingly, it selected the architect, and the plans were prepared with minutest detail under its direction. Nothing was left undone which could have added to the usefulness of the building or the completeness of all its appointments. Every important detail of plan and construction was passed upon personally by Mr. John J. Mitchell, president of the bank. Thus far it is said to have cost $450,000, while to complete the safety deposit department about $150,000 more will be required.

The erection of this structure marks, it is to be hoped, but the beginning of a return to first principles of bank architecture. Fifty years ago all banks were one or two story buildings. Since that time the fashion has been to lose the bank in a mammoth office building. In the new bank, Chicago now experiences the novelty of a two-story structure, erected on one of the most valuable pieces of property in the city. The site permits the complete isolation of the building from neighboring fireproof structures on every side.

It has a frontage of 176 feet 10 inches on La Salle street and also on an alley in the rear, and 167 feet 3 inches each on Jackson and Quincy streets. The building is one story high in the center and two stories around the outside. This is suggested on the exterior by two tiers of windows all around and the peristyle of the main entrance portico, which is carried through the two stories.

The design is by the well-known architectural firm of Messrs. D. H. Burnham & Co., and was selected from a number of competitive designs submitted by leading architects of Chicago.

The exterior walls of the three sides fronting on streets are faced entirely with Hallowell granite, having Corinthian pilasters at the angles of the corner pavilions which have no more projection than is given by these; and a Corinthian cornice, of severe

VISTA IN CORRIDOR, SECOND FLOOR.

outline and without carving, surrounds the whole. The architectural effect is given to the building almost wholly by the recessed portico on the La Salle street front, which is 100 feet long, and the peristyle of fluted Corinthian columns which supports the cornice and the ceiling of the portico. Of these there are eight, while two half-columns are carried up with the ashlar on each

end of the peristyle. The columns are monolithic and thirty-six feet high. It is remarkable how necessary this colonnade is to the effect of the whole; for while the building stood without it, it could not have been said to have much architectural pretension. It was a complete demonstration of the essentials of columnar effects in classic architecture. In style the Roman order of the Temple of Jupiter Stator is most nearly approached; but it is not copied from anything.

The podium of the portico consists of four granite steps, while its ceiling, which is *en caissons* and in imitation of granite, is of terra cotta secured to a grille work of steel beams. The entrance doors, with their transom and grilles are bronze. Over this, on the cornice, are four free eagles, while on either side of the door are eagle panels. This bronze work is the only decorative feature of the exterior, and is of a character to well repay study. The whole is of cast bronze, made in Chicago — in fact, everything in the building except the granite walls is a Chicago product — and is one of the most perfect specimens of bronze casting of purely ornamental work ever executed. With the exception of a few of the surfaces, which are polished on a wheel, the whole is just as it came from the mold. Each of the two doors weighs one ton. They are hung on the top, with ball-bearing pulleys, and are moved by cranks on the inside. The vestibule finish is also entirely of cast bronze.

The illustrations will make this brief description of the interior more intelligible. The visitor, on passing through the vestibule door, will at once view the whole interior of the building, except the private offices on the second floor. The central portion is open up to the glass ceiling, which is on line with the roof, and is covered by a lantern and skylight. At the rear in the center is the aggregation of vaults comprising the strong rooms and book vaults. The central portion of the main floor is inclosed with the usual counters, the fronts of which are of red Numidian marble, imported from the coast of Southern Africa, with a base of Alps green, while the counter tops are of the variety known as Lyonnaise Champlain, from Vermont, surmounted with bronze-plated iron grilles, within which the clerks for ordinary business have their offices. The savings department is on the left, while the banking department is on the right. The whole floor, including the corridors surrounding the bank clerks and the place under the galleries, is 160 by 170 feet. There is one stairway to the right of the entrance leading to the safety deposit vaults, and there are two stairways leading to the gallery; the one on the south side of the building is for the public, and that to the left of the vaults is for the officers and clerks. It was originally contemplated to have a grand stairway opposite the entrance, with platform, and two return flights to the gallery. It would have been carried over part of the clerk's space, and would have injured the perspective effect from the main entrance, no less than taken some of the most valuable room on the floor. A serious consideration demonstrated that this stairway was unnecessary, especially as an elevator is provided to the left of the entrance, and still another can be put in at any time on the right-hand side. The use of private telephones and a pneumatic message service between all the officers will reduce the necessity for passing up and down between their rooms. There is a large amount of space under the galleries, which pass entirely around the building, which can hereafter be inclosed for offices, still leaving a corridor for the public between them and the central space.

The chief architectural feature of the interior is the colonnade supporting the gallery front, the balustrade to the same, the colonnade and arcade of the gallery immediately above the former, the coved ceiling and the glass roof. The first story order is enriched Roman Doric, and the second story order is Composite. The whole is in Siena marble relieved by harmonizing particolor work and gold. The ceiling under the gallery is *en caissons*, and richly decorated. The arcade and cove in the second story have provided a splendid field for decoration that has been most successfully executed, the whole effect being a warm buff relieved with considerable gold leaf work, in the style of the early Italian Renaissance.

In the north gallery are the extensive offices of the Trust and Real Estate department, which, continued around the east side, have access to the vault on that story. In the northwest corner is a magnificent room for the secretary, with anterooms and retiring rooms, while connected with it is a ladies' reception room. These rooms are all highly decorated. The offices for the principal bank officers, and the directors' room occupy the whole of the south gallery, except the gallery corridor, which continues entirely around the building next to the marble balustrade. The president's room is in the southwest corner, and is provided with an anteroom on one side and a private office on the other, next to which is the vice-president's room. All of these rooms, as well as all other parts of the building where wood finish has been required, are finished with a new wood never before used in Chicago, and brought from East India, called vermilion wood. It received this name on account of its dark red color. From a decorative point of view, both in color and grain, it ranks between mahogany and rosewood. All the inside finish, wainscots and mantels in these rooms are too elaborate for description, and reference must be made for this to the photographic illustrations. What remains of the side walls of the president's room, after the wainscot pilasters and cornice of vermilion wood, is a series of panels which are filled with gobelin, painted in flat colors, with conventional landscape designs after the manner of old Flemish woven gobelin, the tints being subdued to harmonize with the dark woodwork.

The most extensive lay-out ever designed for a safe deposit business will ultimately be located in the basement, occupying all the space under the building and the sidewalks on the south and west sides not required for the mechanical departments, ventilating and heating apparatus, lavatories, refectory, gymnasium and other conveniences for the numerous clerks and officers. As this space will be entirely lighted and ventilated by artificial means, these considerations have not embarrassed the planning of it. The great vault, which will ultimately contain six thousand boxes, will be under the center of the banking room. This is surrounded by a strong steel grille, within which are all the coupon boxes, and within which only boxholders will be admitted. On the north side, outside of this, are six committee rooms for the use of corporations having business with the bank. There are also extensive store rooms for trunks, works of art and other valuables. Outside of everything, between the street retaining wall and the inclosing brick partition of the safe deposit, is an ambulatory to be patrolled by watchmen, who have no access to the interior. The main vault will be 30 by 50 feet in size.

The mechanical arrangements are remarkable from the fact that the building will contain no fires, boilers or steam engines. The supply of steam for heating will come from the plant in The Rookery building, which adjoins it on the north, both buildings nearly meeting under Quincy street, where but a small space, reserved for public pipes, remains between the walls of both. As the heating is all indirect, and the ventilation forced, the steam coils are all in the basement. The mechanical arrangements occupy the northeast corner of the basement and the clerks' conveniences are in the southeast corner. The source of supply for all power is the Chicago Edison Company's system of underground wires, which also supplies the current for lighting. The ventilating fans, ice machines for cooling the air in summer and air compressors for the pneumatic system of conveying papers are all operated by electric motors. Thus coal at a distant point produces steam, steam operates engines which propel dynamos; wires conduct the electric power to motors which operate machines that produce cold vapors in pipes which reduce the temperature of air that is forced to us by other electric motors and fans. The pneumatic system enables the president and all the officers to send papers back and forth to the other officers with whom they have to communicate, supplemented by a private system of telephones with central stations in the building, so that they can transact their business with each other without leaving their desks.

In the clerks' department in the basement, besides lavatories of the most improved kind, is a large gymnasium, supplemented by dressing rooms, lockers and shower baths. There is also a reading and smoking room in the basement.

In the construction of this building it goes without saying that structural steel is used wherever possible, though cast-iron columns are also used. Architectural considerations made it imperative to use cast-iron columns. And for the same reason skeleton construction was not necessary, the walls, where not of granite, being of hard brick. All interior and roof construction not of steel is of hollow porous terra cotta.

The flooring, where not with tiles, is of quarter-sawed oak, and polished. The whole building is decorated by Chicago artists, and nothing in this respect left incomplete. The inside finish is all cabinet work, there being little for carpenters to do more than laying the few floors that are of oak. The bank desks were a special

GENERAL NORTHWEST VIEW FROM THE ARCADE, SECOND FLOOR.

VIEW OF THE TRUST DEPARTMENT, NORTH SIDE OF ARCADE, SECOND FLOOR.

study and made by the oldest Chicago house that makes a specialty of that kind of work. The hardware is of special design, the decoration of the door plates showing the emblem of Chicago and the monogram of the bank. The electric wiring and lighting is

RAISING A CAPITAL TO PLACE.

all done by the company that furnishes the current. All floors of public places are laid with art marble tiling. Nothing can be desired to make the plumbing and sanitation complete.

The most remarkable fact connected with this structure is the short time within which it has been built. The time table is as follows:

Active work on the building commenced September 1, 1896.

On Wednesday, February 3, 1897, the roof was put on.

The building to be ready by May 1, 1897. This is where the interior details of ornamental plaster, vermilion mahogany finish, marble work, bronze work, painting and decorations, came into play, and work that ordinarily takes nine to ten months to finish was completed in three months.

The superintendency of Mr. Ernest R. Graham, of the firm of D. H. Burnham & Co., with the cordial coöperation of the contractors, made such rapid work possible.

Some might not think this to be extraordinary in the case of a two-story and basement building. But when it is considered that the bank commenced business on the very day first set, it is evident that none of the contractors caused any unnecessary delay; and what is most remarkable about it is, that nothing has been neglected and nothing is incomplete, but everything that ought to be finished *is* finished. It was not expected that the safe deposit department in the basement would be completed until summer, so there has been no disappointment in that respect.

It is necessary to a full understanding of the mechanical work to append a more technical description of some of the useful features:

THE GREAT VAULTS.

The ordinary complement of the bank consists of five large book vaults for the banking department and five storage vaults in the basement in the safety deposit department, but of greatest interest and importance are the three heavy chrome steel vaults especially designed for the protection of money and valuables against fire, burglary or mob violence. These three vaults are dynamite and nitro-glycerine proof, and are something entirely new in vault construction, nothing at all equal to them ever having been built before. They were manufactured and erected by the Herring-Hall-Marvin Company, of Cincinnati, and were designed by E. A. Strauss, the well-known vault and safe expert and engineer, of Chicago. New principles in vault building have been employed throughout, and neither effort nor expense has been spared in making these vaults perfect in every respect.

One of the three vaults is located on the first floor and is intended exclusively for the banking department. It is 20 feet long by 9 feet wide and 8 feet 6 inches high. Another vault, 15 feet long, 14 feet 6 inches wide and 8 feet 6 inches high, is on the second floor and is intended for the trust department. The third is in the basement, and contains 6,000 private boxes for the use of the public for safety deposit purposes. Thus, absolute security is provided for three classes of property, namely, money, securities and individual valuables.

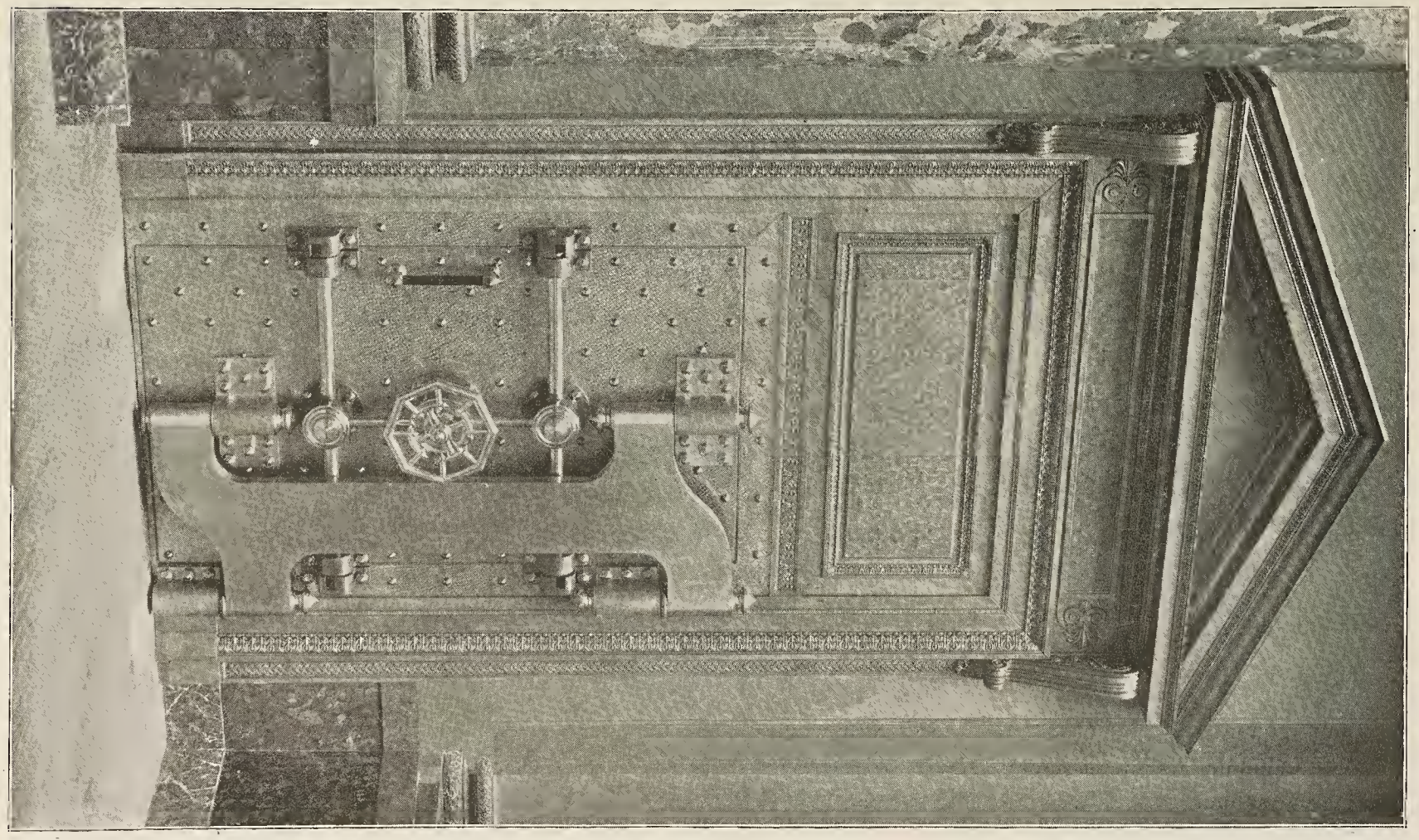
In the ordinary vault construction half-inch plates have heretofore been used, protected in some places by one-inch surface plates, with doors four or five inches thick. In the present construction an entirely new departure has been made. The body of the vault is formed of four layers of one-inch plates, making an entire thickness of four inches; two of these plates are of chrome steel, carefully tempered and tested, and absolutely impenetrable by tools. The other two plates are of homogeneous steel, which offers the proper resistance against explosives. The corners and ends of the vault may be said to be absolutely without joints, since the plates are first bent to the required shape and size and are then welded into position. Where two plates join they are fitted to each other and held together by one and one-eighth inch drill-proof machine screws, of which 10,000 each were used for the first and second story vaults, and about 95,000 for the deposit vault. All crevices between plates are filled with an oil cement, and then the screws are drawn tight, compressing the cement and making the entire vault both air and water proof.

Thus far it is apparent that the body of the vault work is constructed on a plan far superior to anything heretofore attempted in the world, not excepting the famous vaults of the Bank of England. But of greater importance is the mechanical arrangement for opening and closing and locking the vaults, and in the design and manufacture of these vital parts will be seen the superior workmanship and engineering skill of the Herring-Hall-Marvin Company, and the superintendent, Mr. E. A. Stranss. In the first place, each of the vaults has two entrances. This provides perfect ventilation and renders the accident of a "lock-out" most remotely possible. This is regarded as a terrible calamity, for should these vaults become hopelessly locked even the experts would find great difficulty in penetrating them. Days and possibly weeks would intervene before they could be opened. The two entrances, however, are a positive assurance against such a calamity.

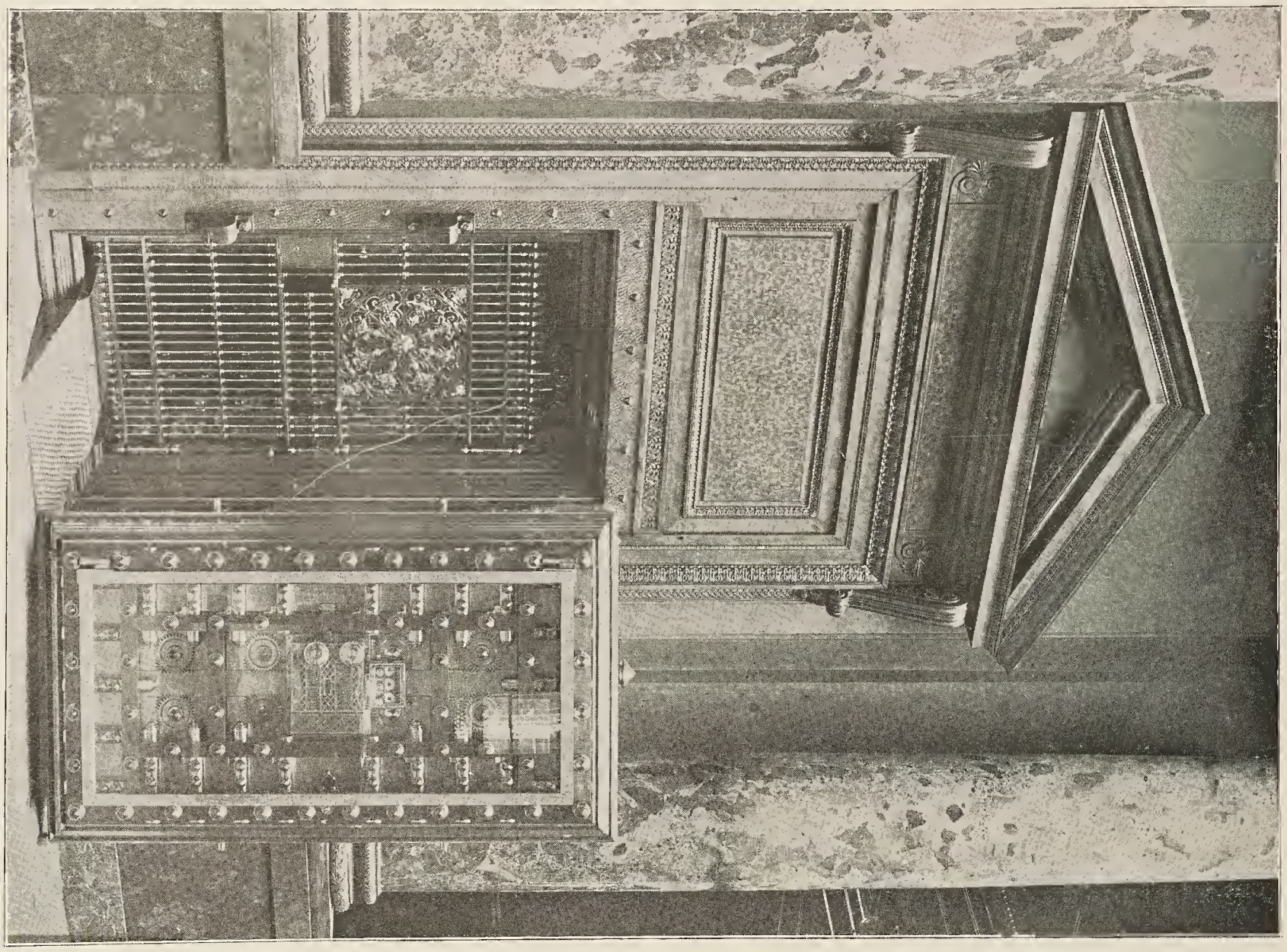
Each entrance is protected by a double set of doors, an outer door and a folding inner door. The outer door, with bolt mechanism, has the enormous thickness of fifteen inches, and the inner door is seven inches thick, making a combined thickness of twenty-two inches of solid steel which must be penetrated before access can be gained to the interior of the vaults. Each outer door has an approximate weight of ten tons, and with its frame twenty-five tons. It is ground and fitted into the jambs and is packed with an indestructible packing in a double set of grooves which extend all around the door and jambs to prevent the entering of wedges for making an opening for the introduction of explosives.

These enormous doors of ten tons weight swing on a hinge of special design, forged by Carnegie in one solid piece of Bessemer steel and weighing two thousand pounds. The doors rest on ball bearings and can be operated by a child. The balls cannot wear, but provision has been made to adjust the doors in any direction should there be any necessity for it. Each door is moved and forced into its seat by an ingenious compound pressure mechanism, consisting of eccentrics, worm and gear wheels, operated by a handsome hand-wheel, causing the door to enter perfectly square and airtight. A hydraulic pressure of 2,000 pounds to the square inch was applied to the joint of the door to test its airtight quality.

Each door is a solid piece of steel; no hole goes through it for lock, spindles or arbors. A specially constructed motor on the inside of the door moves the boltwork backward and forward automatically. This motor is controlled by a quadruple time lock or a time lock with four separate movements; if one, two, or three of the movements should by any cause fail to do the work, the fourth one would still be operative. If by an explosion of dynamite, or by other means, the time lock should be jarred from the



EXTERIOR VIEW OF THE GREAT VAULT DOOR AND MASSIVE HINGE.



VIEW OF THE MECHANISM OF THE GREAT VAULT DOOR.

door, its displacement would cause the fall of a lever which would prevent the boltwork from retracting.

By an entirely original plan, executed by the Herring-Hall-Marvin Company from designs by E. A. Strauss, the boltwork is made to move on rollers by gear wheels, which insures smooth and even motion with the minimum of friction. The bolt mechanism weighs two thousand pounds. The bolts are each 2½ inches in diameter and rest on rollers. They are wedge-shaped at the ends where they come in contact with the jambs, so that when locked the door is held absolutely tight in the jamb. The inner door is controlled by two combination locks, either one of which will unlock it. Inside the bank vault, which contains currency, are a number of safes especially designed by Mr. Strauss for the use of the tellers of the bank. These safes also are made of the finest chrome steel.

The external appearance of the three vaults is striking, the finish being polished metal throughout. The vaults are entirely isolated, an arrangement which allows the watchmen to walk all around them and inspect every part. Below each vault is a foundation extending below the water level and consisting of steel rails and concrete, which is impenetrable. As an additional safeguard against attack an electrical alarm is provided for each vault. This triumph of modern strong-box manufacture is a lasting monument to the science and skill of the designer, Mr. Strauss, and the manufacturers, the Herring-Hall-Marvin Company. As an indication of the painstaking care with which these vaults were constructed it may be stated that they were first erected complete at the works of the Herring-Hall-Marvin Company, and not until pronounced perfect were they taken down, shipped to Chicago and reërected here. The Illinois Trust and Savings Bank may be congratulated on having, in connection with their truly palatial banking home, the finest system of safes and vaults in the world.

DECORATION.

The color scheme is one of soft buff tone, picked out with the modified shades of the primary colors, richly gilded and shaded. The motif of ornamental detail is that of the Italian Renaissance, and is carefully studied from authentic examples. The

VIEW OF ARCADE AND COVE, SECOND FLOOR.

large panels of the cove are worthy of careful study by those interested in ornamental design. The harmonies of color produced by the decorators are in perfect concert with that of the marble and wood work, and are rich, soft and restful to the eye. The gilding is so judiciously handled that, though very lavish, there is no ostentatious display.

The richly modeled ceilings of the president's, secretary's and directors' rooms are very beautiful, and soft in colors and gilding. The walls of the president's room are hung with painted gobelin tapestry, and that of the secretary with a close imitation of an old Italian hanging. The minor rooms are all carefully studied, and are as carefully treated as those of a more public character. This work was all accomplished in the remarkably short time of six weeks by Messrs. Crossman & Sturdy, 287 Michigan avenue.

PLASTER DECORATIONS.

One of the most striking architectural features of the building is the first-story ceiling, executed in stucco, with its heavy and richly decorated plaster beams and coffered ceiling. The ornamental moldings of the cornice and beams are modeled after the noteworthy examples of classic architecture.

In the second story, of special interest are the ceilings of the official rooms. All of them are coffered ceilings of a different design. The most notable ones are the president's, the secretary's, the directors', and the assembly rooms. The ceiling of the president's room is by far the most elaborate of all with its enriched cornice, its octagon coffers and ornamented panels and rosettes. This room is considered the state room of the bank. Next to this in stateliness is the directors' room. Of special note in the second story is the loggia of the rotunda with its vaulted ceiling. It gives the interior of the bank the appearance of an Italian palazzo. This work was all done in adamant plaster by Messrs. McNulty Brothers, of Chicago, to whom great credit and praise is due for the workmanship and rapidity, it being completed in the short time of forty days. These art ceilings of heavy relief are worthy of special notice by those interested.

FLOORING.

In the president's, secretary's, directors' and all adjacent rooms of the second story, the flooring consists of quarter-sawed white oak — 1¾ inch face, bored, polished and end-matched. A part of the main banking floor and basement is laid with thoroughly kiln-dried polished maple. This flooring was furnished by the South Side Lumber Company, of Ashland avenue and Twenty-second street, Chicago. The amount of flooring used for the building was about 80,000 feet, and if placed end to end would extend a distance of nearly fourteen miles.

THE FURNITURE.

As to the office furniture it was made from special designs. The manufacturers made a study of all the requirements, so as to secure the following results:

Each article in its mechanical features and general proportions was planned to fit its particular use, and in its decorative features, to be in perfect harmony with the architecture of the building, and in its own individuality to meet all above requirements, and yet be entirely new and different from anything designed for the purpose.

In general decorative features, the Roman Corinthian scroll and acanthus leaf is the motif, and a quiet dignity due to massiveness and general severity of decoration is the spirit prevailing in all the designs. The general construction of the work has been such as to warrant the life of the furniture equal to that of the building.

The wood used by the A. H. Andrews Company in this furniture is a special mahogany, imported from India, which is remarkable for its dark vermilion color and its beautiful black line grain, both of which are brought out in their greatest possible richness, by the high-class methods used in finishing.

The directors' table and chairs will attract special attention, on account of the fine modeling in the carving of the table and the bold lines of the chairs. While these chairs are massive and dignified, they also embody the rare quality of being comfortable to sit upon, and exactly adapted to the purposes of a deliberative body.

The curtain desks are also specially designed, and are entirely different from anything else yet gotten up, as they combine all the mechanical features required by a bank officer, together with the necessary convenience, and simple artistic treatment.

The special features of the president's and secretary's offices are the large flat top desks, which, perhaps, with the directors' table, are the most elegant articles in the entire schedule.

The leather used on the various pieces of furniture, such as chairs, desks and tables, was specially made to order in colors to harmonize with the decorations of the various rooms.

The furniture for the ladies' waiting room was particularly designed to suit a ladies' business office, the style being pure

VIEW IN THE PRESIDENT'S ROOM.

VIEW IN THE SECRETARY'S ROOM.

Colonial, and the covering of the chairs and sofa of ribbed velvet fabric. In this particular room an effort was made to get away from hard business lines and secure a compromise leaning toward a warmer social feeling.

It is not strange that the A. H. Andrews Company should have been selected to make the furniture, as they have perhaps the longest experience and the largest facilities of this kind in the world, being pioneers in the line of bank furniture.

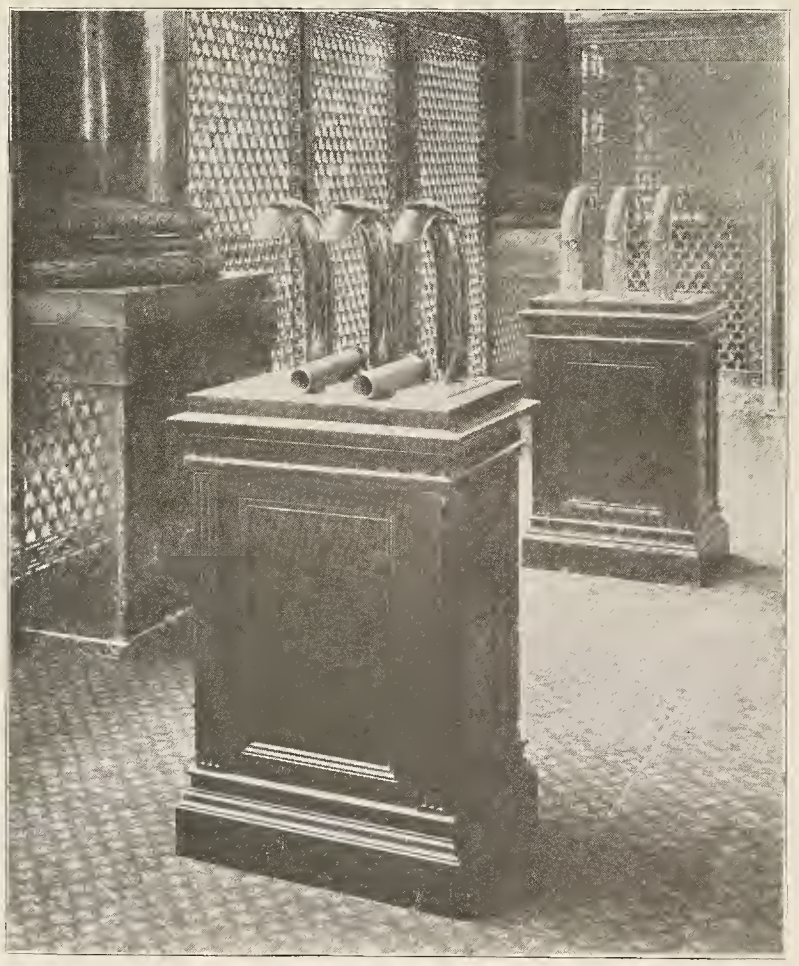
ORNAMENTAL BRONZE AND IRON.

As one walks up the granite steps, past the great granite columns, and approaches the entrance of the bank before banking hours, he is brought to a sudden stop by a pair of massive bronze doors, before which he feels as helpless as a pigmy at the base of the rocks of Gibraltar. They are fourteen feet high by thirteen in width, and their immense thickness is suggested by the depth of the paneling. These doors, so beautiful to look at, seem to have a quiet, artistically polite way of bidding defiance to the outer world. They are deeply paneled with large rosettes in each panel, alternating in design. The metal is bronze, left in its natural color, directly from the mold; nothing about them is burnished except the Roman border, two inches wide. They without doubt represent the finest piece of molded bronze work in the world, weighing over a ton each. At the hour of bank opening they roll back silently and disappear into pockets behind the granite walls. The doors are hung on ball-bearing rollers, and are so arranged with gears and levers that notwithstanding their great weight one man can easily open them in a moment by the use of a winding device.

The vestibule inside the entrance is of iron heavily plated in a duplex bronze. This large vestibule, with its highly ornamented French Renaissance pilasters and grille work, is one of the impressive features of the bank. North of the vestibule is the elevator. This is treated in the same style as the vestibule, and excepting for the overhead work reaching to the ceiling seems to be a part of it. The elevator doors are double, opening in opposite directions by a simple contrivance, giving a very wide and convenient opening to the car. These doors, on account of their design, are quite heavy, but this difficulty has been overcome by using ball-bearing hangers, and a special track, making the doors work easier even than those hung on the usual anti-friction rollers. The bronze elevator cab is also a work of art.

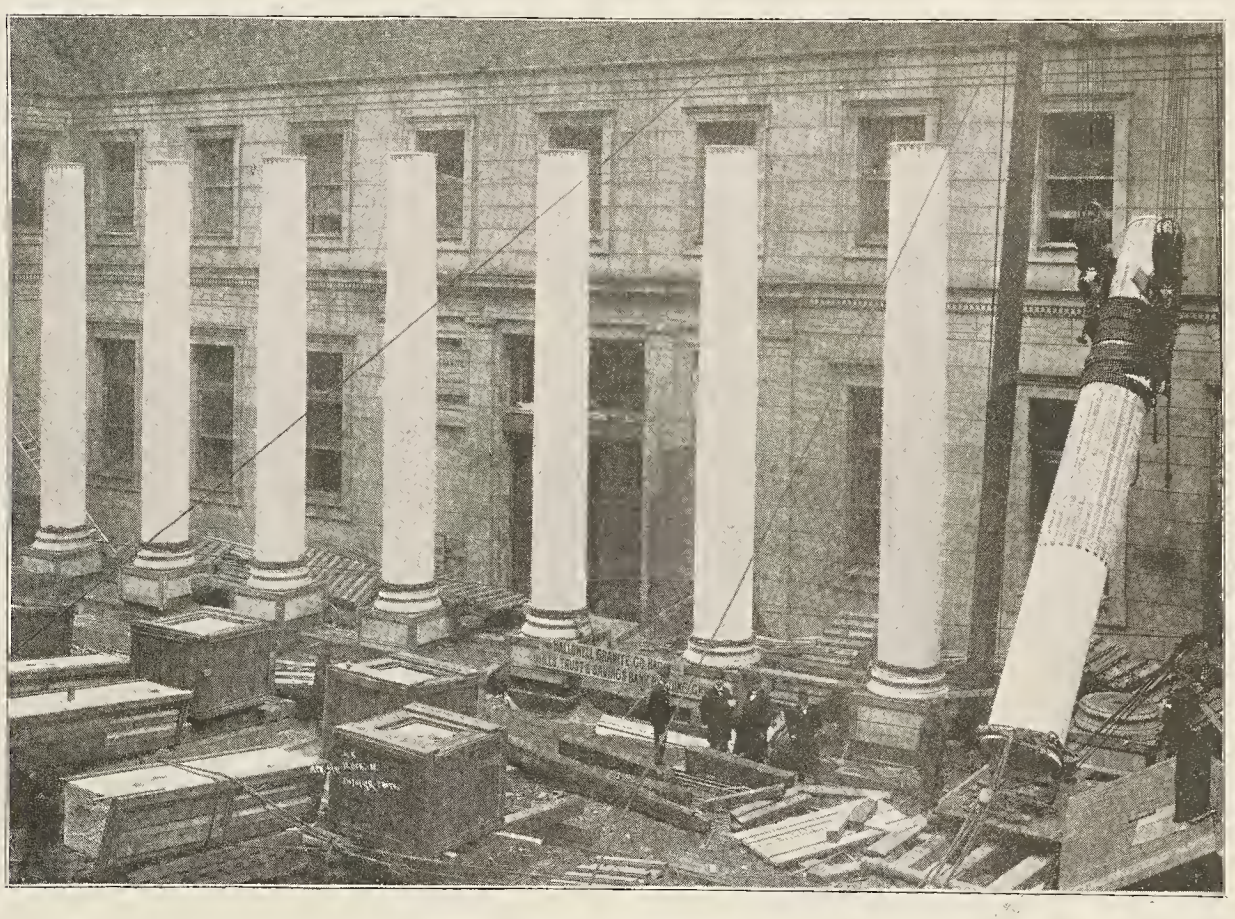
Approaching the counters where the tellers are at work the bronze counter railing attracts one's attention by its exquisite design, a delicate fleur-de-lis with Grecian border; ornamental pilasters, and transoms with a row of artistically modeled acroteria along the top, and also by the unusual quantity and length of it. This counter railing extends around three sides of this immense banking room, and at the rear incloses the savings and other departments as well. The wickets at each of the tellers' windows instead of being hinged in the old-fashioned way, are suspended on spring counterbalances, which adds to their appearance as well as serviceability.

The vault doors are framed with ornamental iron casings, plated in electro-bronze. There are two in the first story, two



PNEUMATIC DISPATCH TUBES.

in the second and three in the basement. The staircases, furnished by the Winslow Brothers Company, deserve special mention. The main staircase in the public space is unique in design. It has four supporting square columns, around the outside of which it winds in an easy ascent from the first to the second story. It has seven platforms, making it a very easy stair for its exceptional height of twenty-five feet. Each platform, instead of being carried out to a square corner, is mitred off, giving the stair an octagonal shape. The finish is electro-bronze. The staircase in the working room, though painted, is designed in keeping with the rest of the work, and is conspicuous on account of its size and the way in which long spans have been taken care of without struts or hangers. The radiator grilles, fireplace frames and other items of this kind all show the most careful and conscientious treatment.



PLACING THE LAST COLUMN.

Returning to the exterior of the building, we will bring this survey of the bronze and iron work to a fitting close by mentioning two pieces of exceptional artistic worth. We refer to the bronze eagle panels on either side of the entrance. These panels are five feet square, cast in solid bronze in high relief. They are works of the highest art,

WEST CORRIDOR, LOOKING NORTH TOWARD ENTRANCE, MAIN FLOOR.

OFFICES OF THE CASHIER AND ASSISTANT CASHIER, MAIN FLOOR.

and the molds from which they were cast consisted of over two hundred drawbacks. On each is an American eagle, with head erect, and piercing eyes; and looking in opposite directions, they stand night and day, in all seasons, mute sentinels, symbols of the vigilance with which the treasures of the people are guarded, with a reserve force of four eagles, in full relief, of solid bronze, standing on the cornice over the entrance. The Winslow Brothers Company, of Chicago, furnished all this bronze and iron work from special designs. The national reputation of this company relieves us of the necessity of attempting any further words of praise in this connection.

GRANITE.

The Hallowell Granite Company were awarded the contract for the stone work of this building, not only on account of their price, but from the fact of the appearance and quality of the material (the Hallowell granite being nearly pure white, and very fine grained), and what was the most important reason of all, their well-known ability to execute such a contract in the shortest possible time. That they have this ability is due to their extensive quarries, facilities for handling and dressing the stone, and a long experience in detailing and managing the work, which is done in a most thorough and systematic manner from the time the plans are received until the last stone is placed in the building.

The most imposing external feature of this building is the loggia, the eight fluted columns of which are among the largest in any building in this country. These are three feet eight inches in diameter, and thirty feet six inches long, weighing in the finished state twenty-five tons, and nearly double this when taken from the quarry in the rough.

The columns are surmounted with full Corinthian capitals, being five feet six inches square at the abacus, and four feet four inches high. Workmen were engaged on these columns and capitals day and night. The facilities and machinery for handling these large columns was such that the contractor placed them in position in nine days.

All the work in the building, with the exception of the columns and the work above the same, was furnished and placed in position one month ahead of the contract time, thus enabling the other contractors to get the roof on and complete the building ready for occupancy by May 1, and is an illustration that a building, even made of this material, quarried and dressed at such a distance away, can be put up with great rapidity, which is a point worthy of the consideration of both owners and architects desiring to use granite.

One of the illustrations given in this number shows the placing of the last column in position and another illustration shows the placing of the first capital.

STRUCTURAL IRON AND STEEL.

Cast-iron columns were used exclusively in the construction of this building, 156 of them, carrying first and second floors and roof. Riveted trusses supporting the immense skylight extend from wall to wall of the exterior stonework. All the floor, ceiling and roof beams are of steel, and 100 tons of steel beams were used in the foundations of the bank vaults, 1,000 tons being required in the entire structure. All holes in the columns and beams were drilled, turned bolts being used exclusively where the work was not riveted. The entire ceiling space around central skylight was formed of arches, for the support of which a network of bent angles and tees were used. The entire structural iron and steel was furnished and erected by the Hansell-Elcock Foundry Company whose works are situated at Archer avenue, Twenty-third Place, Butler and Twenty-fourth streets, where all modern appliances known are used for the prompt execution of contracts of any magnitude.

PNEUMATIC DISPATCH TUBES.

The pneumatic tube system for the purpose of transmitting papers, messages, orders, etc., in the Illinois Trust and Savings Bank consists of ten lines of tubes connecting the offices of the officials of the bank as follows: President and secretary; president and vice-president; vice-president and draft teller; cashier to collections; cashier to foreign exchange and bond teller; cashier to draft teller; assistant cashier to collections; assistant cashier to draft teller; collections to Trust Department; assistant cashier to foreign and bond teller.

The system is known as the Automatic Pressure System. The brass tube through which the carriers are sent is 2¼ inches in diameter, and the wrought-iron supply pipes for supplying air to the different stations are of various sizes to meet the requirements. The air is supplied by Ingersoll-Sargeant compressors run by Crocker-Wheeler motors. The latter are automatically controlled by the air pressure in the supply tanks located in the basement.

The tubing is all laid in the cement floor, and is painted with asphaltum to prevent any chemical action from the cement.

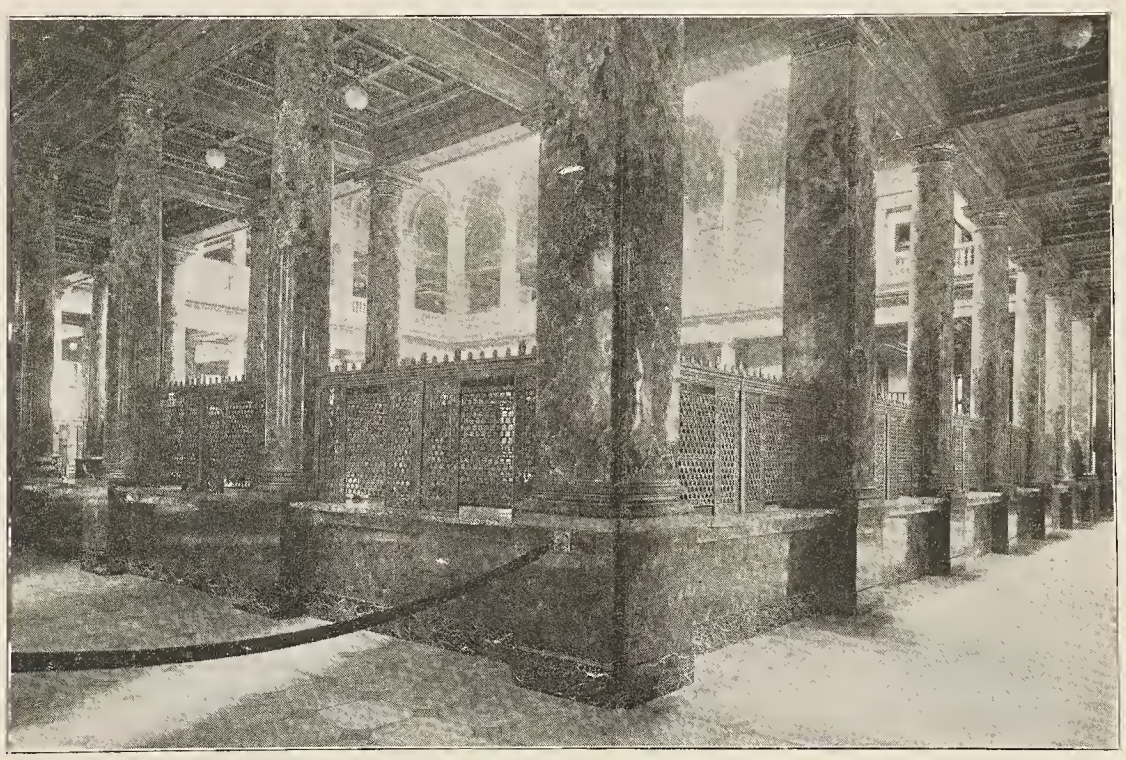
On account of the limited space for curves a special curve was made of cast iron, enlarged at the center to allow the carriers to make the turn easily. The carriers are leather, 1⅞ inches in diameter and 9 inches long, of ample capacity to carry stock, bonds, drafts, checks, etc.

The operation of the system is as follows: The carrier is placed in the tube and the door closed. The closing of this door opens a valve, which admits the air into the dispatch tube from the supply pipe. This forces the carrier through the tube. On the discharging of the carrier at the other end of the tube, it automatically closes an auxiliary door behind the carrier. This auxiliary door closes the tube to the atmosphere and thus prevents the compressed air in the tube from escaping. This sudden stopping of the air causes a pressure upon a diaphragm in the terminal at the sending station. This diaphragm releases the valve which controls the air supply and at the same time opens the vent underneath the terminal and allows the compressed air in the dispatch tube to escape underneath the desk. After a second's duration this air has escaped and the door at the sending end of the tube, as well as the auxiliary door at the receiving end open to their normal positions. The tube is then ready for the sending of another carrier.

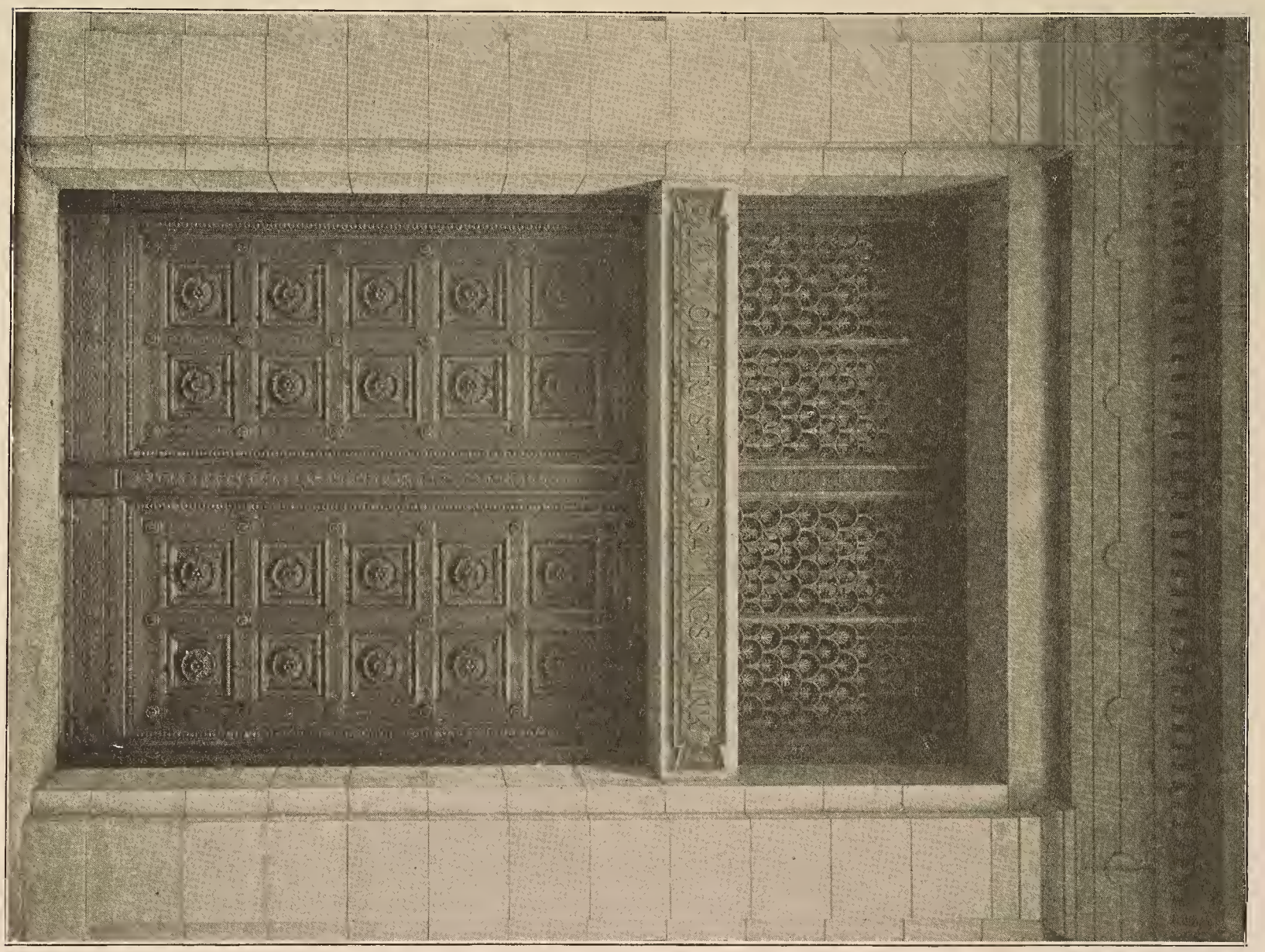
The speed of the carriers is about thirty feet per second. With this style of system the air is used only when the tube is in operation, air being stored in supply tanks and held there until wanted.

An automatic controlling device starts the motor when the pressure runs to the lowest point at which the system will work, and stops the motor when the pressure runs too high. This is a great saving in power.

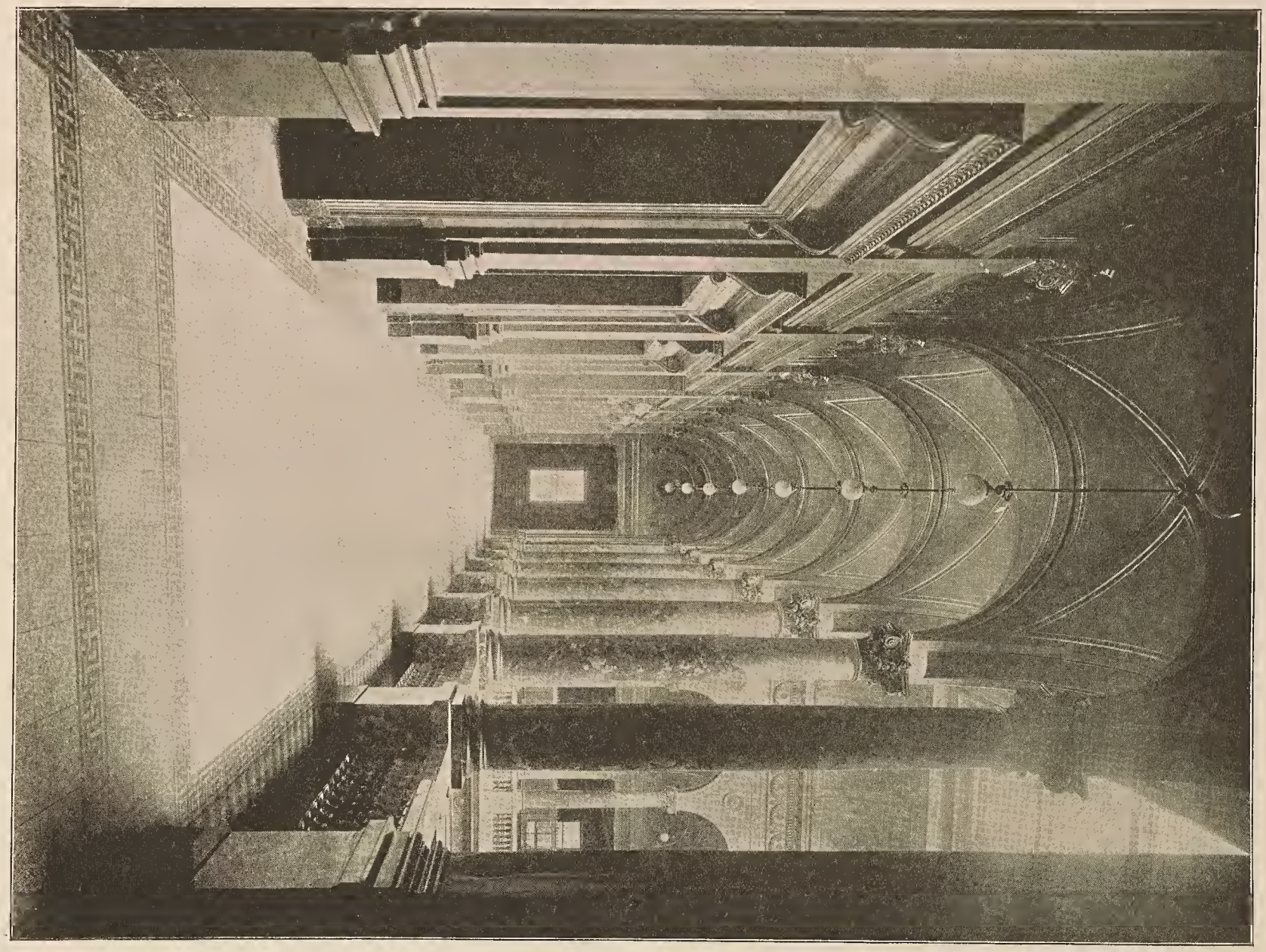
The terminal is so designed that the door closes to the atmosphere before the valve operates which admits the air from the supply pipe to the dispatch tube. This prevents the air from escaping and blowing papers that may be scattered about the desk where the terminal is located. Furthermore, the vent under-



MARBLE COUNTERS AND GRILLE-WORK, MAIN FLOOR.



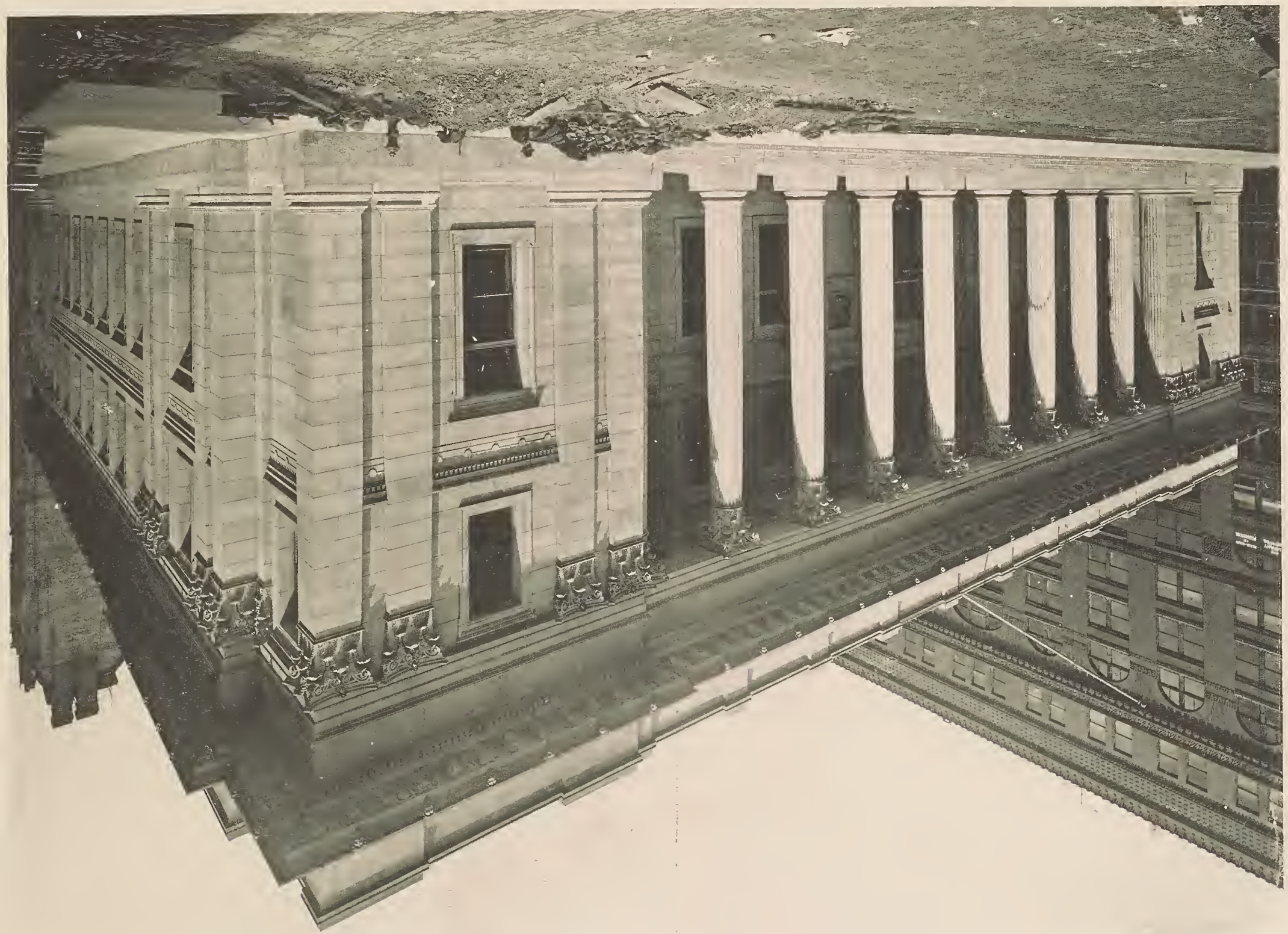
EXTERIOR VIEW OF THE GREAT BRONZE ENTRANCE DOORS AND GRILLES.



VIEW IN CORRIDOR, SECOND FLOOR.

THE ILLINOIS TRUST AND SAVINGS BANK BUILDING, CHICAGO.

D. H. Burnham & Co., Architects.



Vol. xxix. The Inland Architect and News Record

INLAND ARCHITECT PRESS.

PHILADELPHIA & READING RAILWAY TERMINAL STATION, PHILADELPHIA.

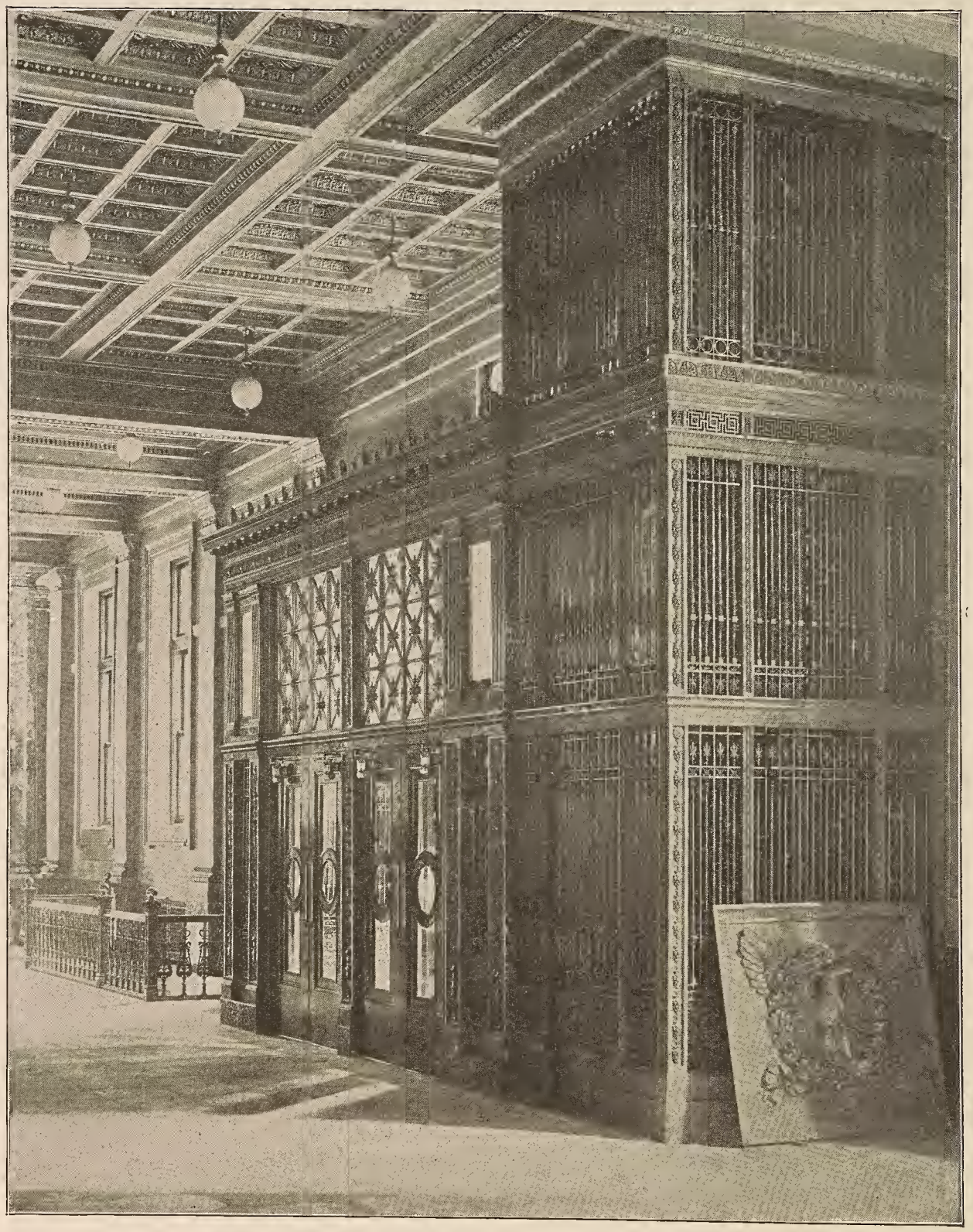
FRANCIS H. KIMBALL, NEW YORK, WILSON BROS., PHILADELPHIA, ASSOCIATE ARCHITECTS.

GENERAL VIEW OF INTERIOR.

THE ILLINOIS TRUST AND SAVINGS BANK BUILDING, CHICAGO.

D. H. BURNHAM & Co., ARCHITECTS.

BRONZE STAIRWAY LEADING TO SECOND FLOOR.



INSIDE VIEW OF VESTIBULE AND ELEVATOR INCLOSURE.

neath the terminal which allows the air to escape from the dispatch tube prevents the slight explosion which otherwise would take place when the door goes back to its normal position.

This pneumatic system obviates the necessity of call boys and messengers, saving time and making the service practically instantaneous. It has in the short time it has been in operation proven itself a great economizer of time and labor and is considered indispensable by the bank officials.

This system is patented, and was installed by the Bostedo Package & Cash Carrier Company, of Chicago.

TELEPHONE SYSTEM.

In conducting the affairs of a large bank where, in a limited number of hours, a great amount of business must be concentrated, nothing has been found to bring about a greater economy of time of the officials and employes than an adequate telephone system. This has been provided for the Illinois Trust and Savings Company by what is known as a combined private and private-branch telephone exchange, installed in the bank itself by the Chicago Telephone Company. A metallic circuit telephone switchboard has been placed in one of the rooms of the bank and is operated by the bank's own private telephone operator. Trunk lines extend directly from this switchboard to the main office of the telephone company. Upon the desks of a number of officials of the bank conveniently arranged telephone instruments are placed so that the official, without leaving his chair, may speak directly not only with other departments of the bank, but with the subscribers in the general telephone exchange or with New York or other long-distance points. The same style of instruments, but adapted to service within the bank exclusively and called "private exchange" telephones, are placed upon the desks or in the departments of other officials. By means of them one official or employe in any department of the bank may speak with another without the loss of a moment's time and may transact business without leaving his desk, and all through the medium of the bank's own exchange and the private operator there employed. In the provision of private branch and private telephone exchanges of the character referred to, the particular needs of each bank, manufacturing company or corporation have been met, and a telephone instrument adapted to these uses is now found to be one of the most useful appurtenances of the desk of a business man.

Throughout the bank building the telephone wires have been laid along and through moldings adapted to their particular use and carried in ducts underneath the tile floors, so that the wiring is not exposed at any point. Even the trunk lines to the general telephone exchange are laid in underground conduits throughout their entire length.

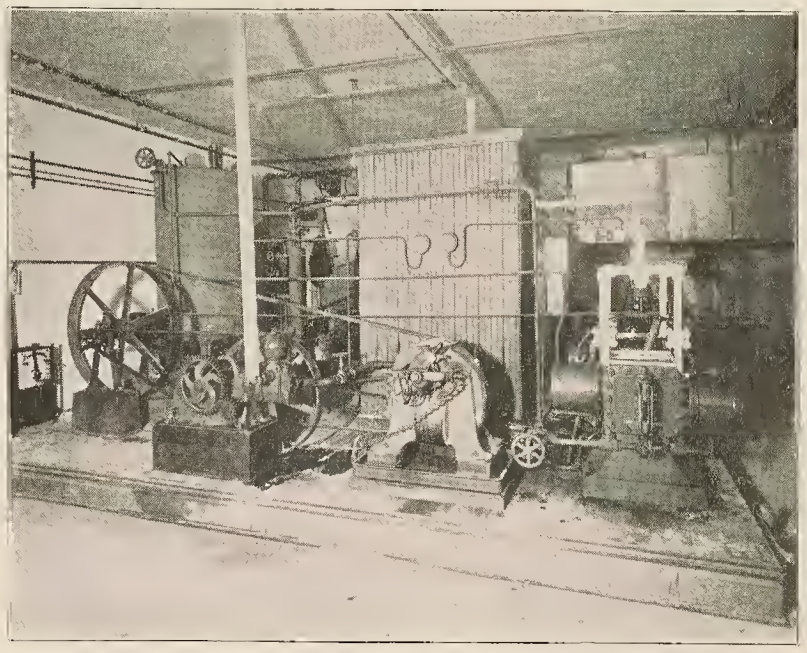
That the conveniences of a properly arranged interior and private branch telephone system are appreciated in Chicago is found in the fact that now nearly two hundred corporations, manufacturing concerns, merchants, banks and other classes of business, have them in use. Our illustration shows the general appearance of the operating switchboard installed for the Illinois Trust and Savings Company bank and the desk telephone referred to.

A rather interesting showing is made in a recent record of the messages handled in one day in one of these private branch exchanges, where it was found that each telephone was used more than fifty times in communicating from one department of the same business to another, not counting in any way the messages to and from the general telephone exchange. The combining in one system the service desired to and from the several departments of one business and to and from the subscribers of the general telephone exchange, makes it possible not only to accomplish all the telephonic communication needed by means of one telephone on the desk, but provides a system which is a distinct and definite part of the general telephone exchange, and is constantly maintained and operated as such, therefore insuring the greatest possible perfection of the service.

Remarks recently made by the head of one of the largest establishments in Chicago have well illustrated the conveniences which we have attempted to describe. He said: "Formerly when I desired to speak with the head of one of the departments of my business I pressed a button on my desk; the young man in my outer office responded and at my request would go to the office of the official desired, perhaps two or three floors away from my office, and inform him that I desired to speak with him. I meanwhile, waiting to complete the business about which I desired to speak with him, would pass my time as best I could, but not without some natural impatience. The official desired would respond as promptly as possible, and at the end of five or ten minutes would reach my office and our business be transacted in a few words. Now all this is changed. Under the same circumstances I utilize the telephone equipment which is upon my desk and as readily reached as my pen. Taking up the telephone, I inform our own operator that I desire to speak with the official in question. In less than a quarter of a minute I hear his voice, say what I have to say, transact the matter of business, hang up my telephone and go ahead with my work in hand without interrupting even the train of thought which had led up to the operation. In the same convenient manner I speak with my residence or with offices in various parts of the city. In the same way, also, and without leaving my desk, I speak with business correspondents in New York, Boston and many other parts of the country. Certainly this modern telephone service has added greatly to my comfort and celerity in transacting my business and my ability to make the most of the time spent in my office."

THE LIGHTING AND MACHINERY.

The electrical features of this handsome building are many; in fact, the ejaculation of Jules Verne's Captain Nemo, as he showed the strangers through the engine room of his unique craft—"all by electricity"—applies most admirably to the Illinois Trust Company's new structure. Here the visitor is admitted through doors opened by electricity; he is cooled and invigorated by the atmosphere of fresh air introduced and circulated by electrically



ICE MACHINE AND MOTOR.

driven fans; he is carried to the upper floors by an electric elevator controlled by electrical starting device; he is refreshed by ice water cooled and distributed by electric power; and the soft light of incandescent electric lamps enable him to see the magnificence of the interior arrangement and decorations.

Electricity operates the system for carrying papers, documents and packages from office to office; electricity calls the stenographers and clerks to the desks of the officials; electricity operates the emergency call system for messengers, fire department and police; electricity pumps the water required for house service to the roof tank and ejects the sewage.

If Lorenzo de Medici, of whom one is constantly reminded by the finish and interior architecture of the Italian Renaissance style, could have foreseen the progress of civilization during the four hundred years following the time in which he lived, it would have required more than the preachings of a Savonarola to have disturbed his meditation.

The construction work of laying the conductors for electric current and the current itself required for operating all these electrical devices is furnished by the Chicago Edison Company, the superiority of whose work and service has given it a practical monopoly in the equipping of all buildings of this class. The opportunity, however, for doing the best work was given it by the wisdom and far-sightedness of the architects and their clients,

who adopted only the most modern methods and would have nothing but the highest grades of material.

Steel conduits are used throughout for all the electrical conductors, and in these conduits a high grade of rubber insulated wire is drawn. All of this wire is of the Duplex type, that is, two

TELEPHONE OPERATING CABINET.

separate insulated wires inclosed in one outer covering of braid, as this type of wire can be handled much more easily in conduit work than two distinct wires.

On each floor in the corners of the building large cut-out cabinets are located. They are shallow boxes of rectangular shape, about 2 by 3 feet and 6 inches in depth, set into the walls. They are constructed of heavy slate and are provided with outer cabinet doors of mahogany. They contain the cut-outs or fuse blocks which form the distributing centers for lighting circuit in the adjacent portions of the building. To these cut-out cabinets come the heavy conductors from three separate street services connected with as many distinct sections of the lighting company's underground system, and from them issues a ramification of tubes and wiring leading directly to the separate chandeliers and brackets, each chandelier and the brackets in each room being upon a single circuit provided in these cut-out boxes with fuses, so that in case of any trouble due to burn outs the circuits can be readily tested and the trouble located from these points.

Each main service entering the building is provided with a heavy service or fire switch, by which, in case of emergency, all of the electric current entering the building on that line may be cut off. These, as stated, will, however, be used only in emergency. All of the chandeliers are provided with separate wall switches for turning on and off the light in ordinary use. The fixtures include chandeliers or pendants, wall brackets and standards.

The rooms of the bank officials are provided each with two or three chandeliers of six or eight lights capacity. They correspond with the style of finish worked out in the woodwork and decorations of the rooms, and are very simple and substantial in appearance, although rich and expensive. The incandescent lamps all hang down, there being a separate pendant for each lamp, and each lamp is provided with a spherical globe. In addition to these chandeliers handsome wall brackets are located at intervals of ten and twelve feet entirely around the sides of the rooms, some being of two lights and others of one light.

The portion of the main floor of the building intended for the public and the balcony of the second floor are lighted by single stem pendant fixtures, the stem terminating in a cluster capable of taking three lamps. In these fixtures are used lamps of 32 candle-power, the three lamps being inclosed in a spherical shade of large size. In the cages and on the employe's desks standard fixtures, however, seem to be best adapted to the work required of them. The wires for these are brought up from below. On the whole the arrangement is admirable, perfectly adapted to the architecture of the building, and most effective for the service required.

Another electrical feature is a most perfect call bell system. In the installation of this, wire equal to that used for the higher pressure lighting currents has for greater durability been used, and here too the conductors are all inclosed in metal conduits. Messengers and stenographers may be summoned from any part of the building, and alarms may be turned in for fire and police departments in case of need; but possibly the application of electric power for various purposes, on account of the fact that it has not become so common as lighting and messenger call systems, will be of greatest interest.

The motor room is located in the extreme northeast section of the basement. Here are several interesting pieces of apparatus: The system for ejecting the sewage from the building by the use of compressed air is very complete. This is in duplicate as regards the power portion of it, and is operated by two Crocker-Wheeler motors of 2 horse-power, which are started automatically when occasion calls.

The large fans for ventilating the building and circulating fresh air are operated by Gibbs motors, two each of 5 horse-power capacity doing the work.

The ice machine, which cools and circulates the water in the building for drinking purposes, is supplied with motive power from Westinghouse motor of 5 horse-power capacity, and a little ½ horse-power Crocker-Wheeler machine pumps all the water needed to supply the large roof tank from which is drawn the water for the hydrants and lavatories, and has to work but very few hours per day, not even the ordinary banking hours. In this power room a neat and handsome switchboard is provided for the meters of the central station company. The whole system is very complete, apparently everything which is

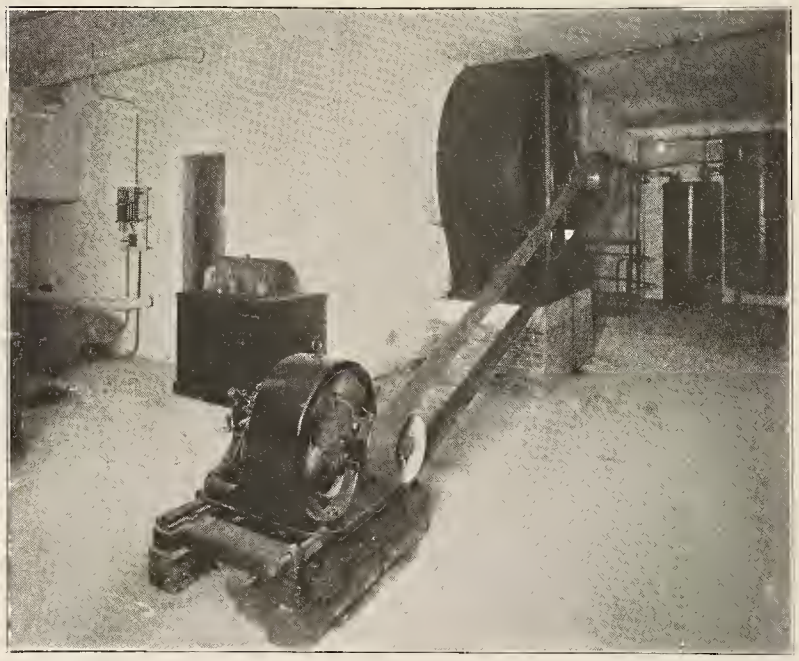
DESK TRANSMITTERS USED IN BANK.

conducive to the comfort and necessity of the bank's force has been provided, and electricity, the great servant of this age and generation, has made these conveniences possible at a minimum of expense and annoyance. A high tribute is paid to the service

supplied by the Chicago Edison Company in the fact that no provision whatever has been made for any other source of power or illumination.

ELECTRIC WIRE.

By no means the least important of the materials used in connection with such a building is the insulated wire to convey the current for the myriads of incandescent lights, motors, and other electrically operated devices. The selection of a high grade of



MOTOR AND VENTILATING FAN.

wire not only insures perfect service, but is an important factor in reducing the fire hazard.

To be in keeping with the high character of the building in general it must be of the very best, and for this reason Simplex Braided Caoutchouc Wire, furnished by the Chicago office of the Simplex Electrical Company, was adopted for use throughout. All of the large feeders and mains, as well as the thousands of feet of smaller sizes for distributing the lights, are of this make. The confidence in selecting this wire is demonstrated fully when it is taken into consideration that entire dependence is placed on the electric light for illumination.

The rubber used in Simplex wire is of the highest quality and surrounds the copper conductor in a perfectly seamless mass. The braids which cover the rubber are treated with an insulating compound, for the purpose of affording additional insulation as well as mechanical protection to the rubber itself.

THE ICE MACHINE.

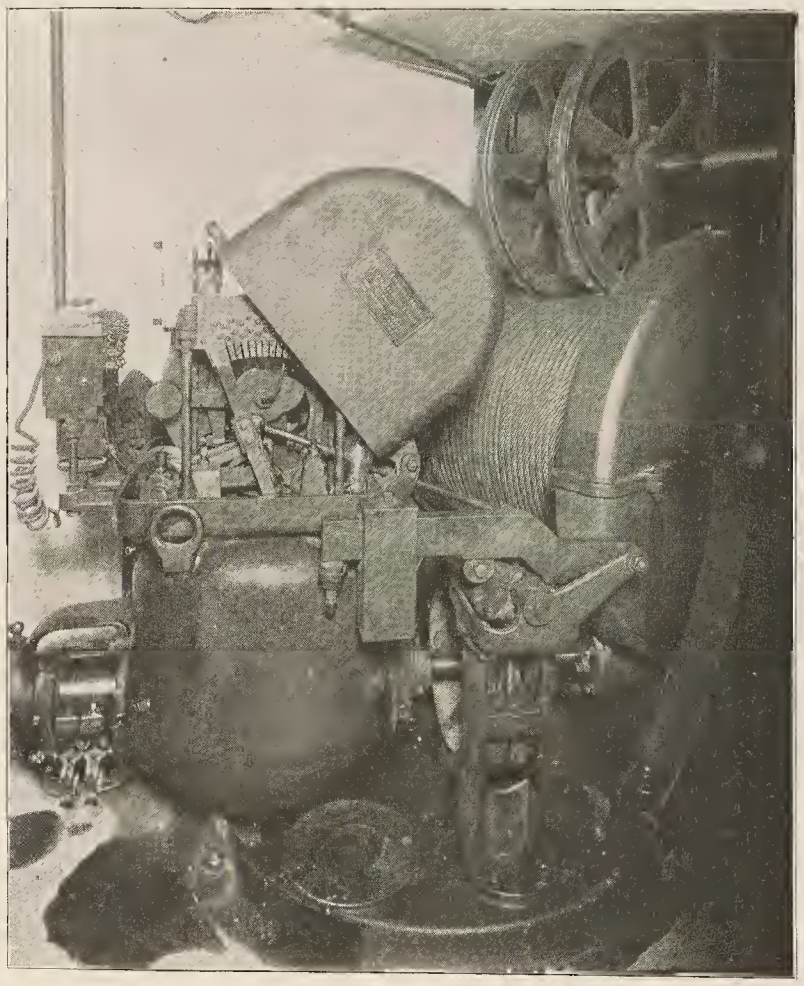
An interesting feature in the machinery department of this building is the refrigerating plant designed and erected by Westinghouse, Church, Kerr & Co. Throughout the building there are a number of faucets from which ice-cold drinking water can be obtained at all times. No ice is used, but, after being filtered, the water passes to a tank where it is made ice cold by this refrigerating plant, and is then circulated throughout the building. A cut is shown of this plant, consisting of ammonia compressor and circulating pump, operated by an electric motor and mounted on a platform with condenser and cold-water plant. This is a very simple and complete outfit, and is being adopted extensively for cooling water in large office and public buildings. For hotels, restaurants, department stores and meat markets these machines are used extensively, not only for cooling drinking water but for cooling refrigerating boxes of all kinds, freezing water in water bottles, making ice, and, in fact, doing all kinds of cooling commonly done with ice.

HEATING AND VENTILATION.

The heating and ventilating apparatus was installed by the George E. Dixon Company, 82 West Jackson boulevard. The building is heated by a low pressure steam apparatus, using the exhaust steam from The Rookery building, adjoining, in connection with a system of direct radiators, carefully distributed throughout the building. The apparatus is of such perfect adjustment that a pressure of one pound on the square inch will circulate steam through the entire system. In connection with this apparatus the Paul vacuum appliances have also been installed, by the use of which a vacuum is maintained in the system and the steam is used below atmospheric pressure, thus insuring a further measure of economy. All water of condensation from the entire apparatus is returned to the receiving tanks in The Rookery, and from thence to the boilers, by the use of a Marsh pump. Steam is employed for many novel purposes in addition to the direct heating of the building. A system of steam coils is provided for the main skylight, which is one of the largest of its kind in this country, the object being to prevent the accumulation of snow in winter and consequent interference with the light. Another series of steam coils, any number of which can be operated at pleasure, is connected with the ventilating apparatus for the purpose of warming the incoming cold air in winter. These steam coils also are connected with the vacuum system, so that they can be operated without any steam pressure.

In the ventilating system, which also was installed by the George E. Dixon Company, the best results of invention and experience have been obtained. The supply of fresh air is drawn from a point above the roof, through a duct of galvanized iron. The air is thoroughly cleansed by being forced through a spray of water and several screens. It is then distributed to the various portions of the building through galvanized iron ducts. The plenum fan, by which the air is forced through the building, is located in the machinery room in the northeast corner of the basement. In cold weather the incoming fresh air is warmed, as above stated. The vitiated air is exhausted from the building through a very extensive series of galvanized iron ducts, converging to the exhaust chamber in the machine room, and from this chamber it is drawn by the large exhaust fan and discharged at a point above the roof of the building through another large galvanized iron duct. The plenum and exhaust fans are of the most perfect construction, noiseless in operation, their motive power being obtained from two Gibbs electric motors, in connection with which are employed all the latest devices for the perfect control of electric power.

The entire work of heating and ventilation has been installed in a manner most satisfactory to the architects and owners of the



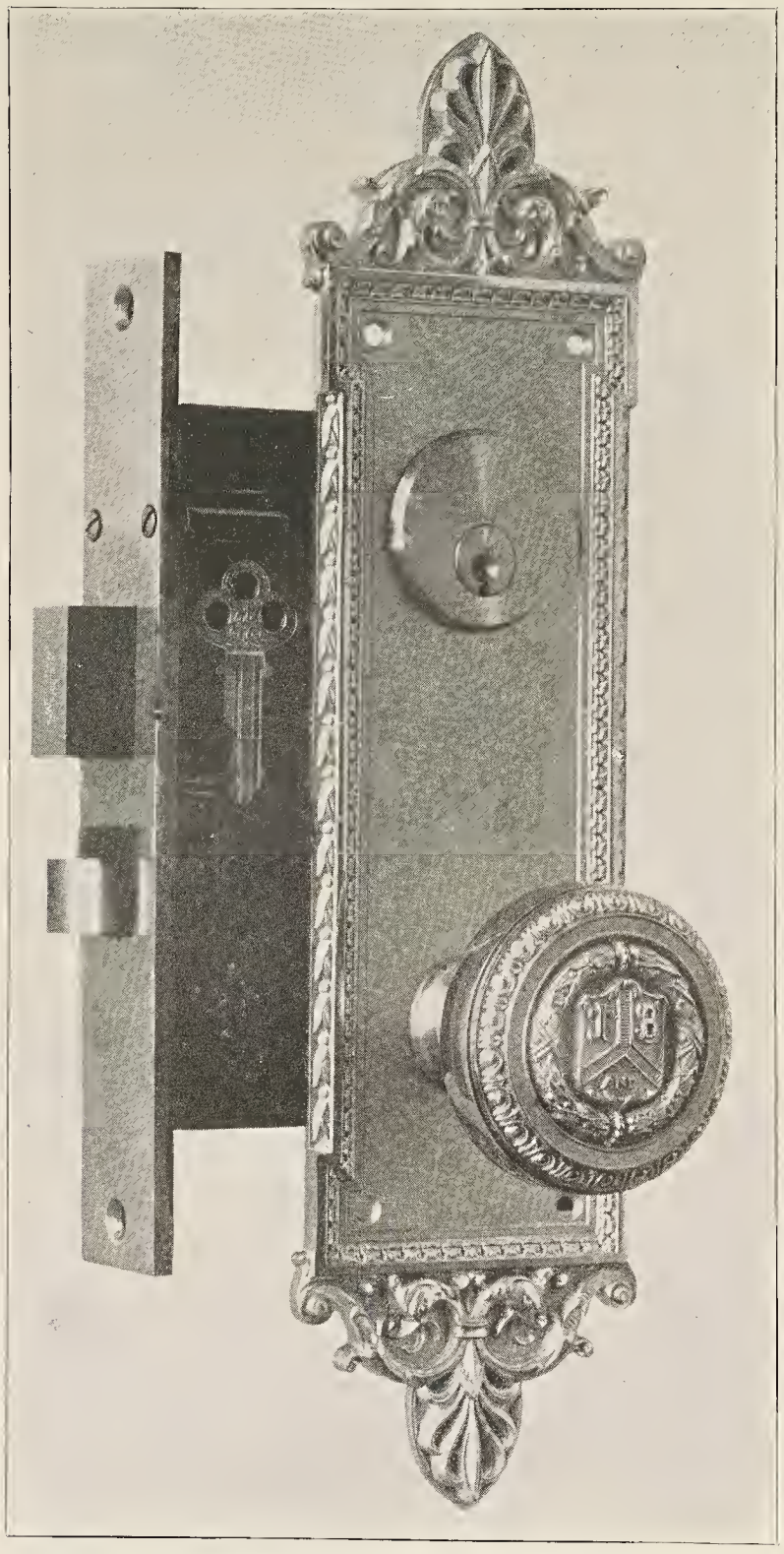
ELEVATOR MOTOR AND MACHINERY.

building, and in the highest degree creditable to the George E. Dixon Company. The aim throughout was to seek perfection rather than to economize at the least expense of efficiency.

The radiators used throughout were supplied by the American Radiator Company, of Chicago.

ORNAMENTAL HARDWARE.

One of the many ornamentations worthy of special mention is the hardware used on the doors and windows, which was all manufactured and furnished from special designs by Messrs. P. & F. Corbin. The locks and doorknobs, on which is the monogram of



BRONZE DOOR LOCK AND ESCUTCHEON.

the bank with the emblem of Chicago, hinges and window trimmings are all of solid bronze, just as they came from the molds. It is very fine work and will warrant a close examination for lovers of beautiful cast work in bronze.

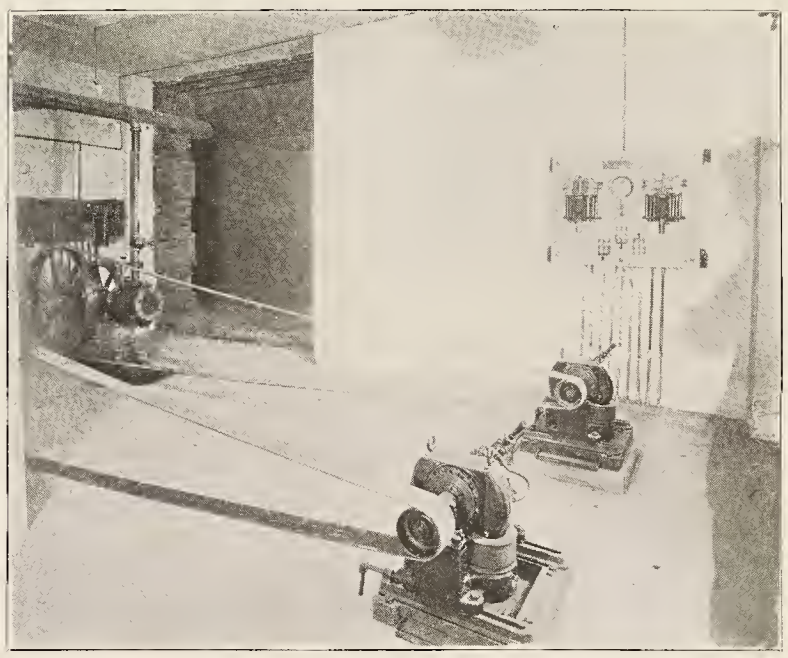
In connection with the hardware used in this building might be mentioned "The Rixson Invisible Transom Lift," which fills a long-felt want in fine building hardware. This transom lift has been patented by O. C. Rixson, of The Rookery building, Chicago.

FIREPROOFING.

In a building of modern construction there must necessarily be many essential features hidden from view by the veneering of marble and plaster. The part in point is the fireproof construction, placed in the floors, around the columns and the partitions between all the offices, etc. This material was supplied by the Illinois Terra-Cotta Lumber Company, of The Rookery building, Chicago.

NOTES.

Mr. E. A. Strauss, who designed the wonderful safe and vault system of the bank, was born in Germany, and in early youth served an apprenticeship in a safe and lock factory at Koenigsberg. To supplement the practical training there obtained, Mr. Strauss took a thorough course in a technical college, from which he received a master mechanic's diploma. Since becoming a



MOTORS CONNECTED WITH EJECTOR PUMPS.

resident of Chicago he has gained a great reputation as an expert safe-opener and a designer of bank and deposit vaults. In addition to his work on the Illinois Trust and Savings Bank vaults, which he considers his masterpiece, Mr. Strauss has superintended the erection of The Rookery, Chamber of Commerce, Pullman, Drover Safety and Roseland vaults.

It will be noted that the half-tone effects are exceptionally fine, and we take pleasure in giving credit to the United Engraving Company, of No. 21 Quincy street, Chicago, for their effort to produce the finest plates possible, especially when the very short time allowed them for the reproductions before publication is taken into consideration.

Photography has become such a universal method of producing nature and effects that little needs be said regarding it. Yet Messrs. Scharf Brothers, of 255 Dearborn street, Chicago, have shown great care and attention in bringing out details of effects under the most trying circumstances. Some of the negatives were exposed over an hour in order to get the desired results.

A Short History of the Illinois Trust and Savings Bank.

IT is fitting at this juncture, now the change from the old and well-known location in the Rookery is made, that a historical review of this institution should be given. Such a sketch will be of widespread interest not alone to the financial world and to the citizens of Chicago who have watched with pride the construction of the bank's new home, but as well to thousands who as correspondents and depositors throughout the country appreciate the growth of the bank's finances to a point where the erection and occupancy of the new quarters have become a possibility.

The bank was organized May 7, 1873, commencing business on the northwest corner of Madison and Market streets. The capital stock at this time was $100,000. The first president of the bank was Mr. L. B. Sidway. In 1875 a change of location was made to Clark street, between Washington and Madison, and the bank's growth continuing with increased force a second change became imperative in 1878, when the quarters so long occupied by the old Fidelity Bank were taken after the failure of the latter named institution. During that year President Sidway retired from the control of the bank's affairs and H. G. Powers assumed the direction of the financial management. He continued in charge until 1880, when the present president, John J. Mitchell, was chosen to succeed him. Under the wise and energetic administration of President Mitchell the deposits soon reached the sum of $1,000,000, an excellent showing for that time, and especially by so comparatively a young concern. Here the Illinois Trust and Savings Bank did a constantly increasing business for ten years, eight of which were under the active and personal management of President Mitchell, no better illustration of whose success could be cited than the fact that when the increased demands for greater facilities, in 1888, demanded and made imperative a third removal, the capital stock had been increased to $2,000,000, a sum twenty times greater than the original capital, and a surplus of $2,500,000 had been accumulated. The ground floor of the Rookery was chosen as the new location and so commodious and extensive were these quarters that the most sanguine friend of the bank would have declared no further change ever would become necessary. But such has been the success of the bank, both in its banking, trust and savings departments, under its present efficient management, that even the commodious quarters in the Rookery have proven too small, and the opportunity presenting itself for the building of a permanent home, planned and erected especially for and by the bank itself, this important and wise undertaking has been accomplished. The officers of the bank are as follows: John J. Mitchell, President; Wm. H. Mitchell, Vice-President; W. H. Reid, Second Vice-President; F. T. Haskell, Third Vice-President; James S. Gibbs, Cashier; B. M. Chattell, Assistant Cashier; Wm. H. Henkle, Secretary.

PRESIDENT JOHN J. MITCHELL.

The Banking Department receives deposits subject to check, paying interest at the rate of two per cent per annum, credited monthly on daily balances in excess of one thousand dollars. The banking department also issues circular letters of credit for travelers, available in all parts of the world, in the currency of the respective countries; issues drafts, checks and bills of exchange on the principal domestic and foreign cities; remits funds by mail or telegraph to any part of the world; buys and sells foreign moneys. To investors the bank sells such high-grade securities as Government, State, County, Municipal and Corporation bonds, handling only such securities as the knowledge and experience of the officers will warrant them in offering to careful investors. The bank does not discount commercial paper.

The Trust Department acts as administrator, executor, guardian, conservator, assignee, and receiver; manages property, makes investments and acts as agent and trustee in the collection and disbursement of rents and other incomes; furnishes competent legal advice in the making of wills and deeds of trust; also acts as transfer agent and registrar of stocks and bonds. All trust funds and trust investments are kept separate from the assets of the bank, but the bank itself is a lawful depository for court and trust funds, and its receipt will relieve an executor, administrator or other trustee and his bondsmen from liability to the extent of such deposit. The capital and surplus of the bank are security for the proper administration of its trust business, and further ample indemnity, now amounting to $500,000, is deposited with the State Auditor.

The Safety Deposit Department, which will soon be completed, will be the largest and most elegantly appointed institution of the kind in the world. Spacious vaults for the safe keeping of silverware, jewels and other valuables are provided. Safes and boxes inside fire and burglar proof vaults can be rented at reasonable rates. Special parlors are reserved for ladies.

THE FOLLOWING IS THE STATEMENT TO THE AUDITOR OF PUBLIC ACCOUNTS OF THE CONDITION OF THE BANK AT THE COMMENCEMENT OF BUSINESS MAY 11, 1897:

RESOURCES.		
Bonds and Stocks,		$4,144,504.21
Cash and Exchange,		13,896,136.29
Real Estate,		12,000.00
Demand Loans, on Collaterals,	$10,885,927.16	
Time Loans, on Collaterals,	3,905,959.26	
Loans on Real Estate,	2,386,233.06	17,178,119.48
		$35,230,759.98

LIABILITIES.		
Capital Stock paid in,		$2,000,000.00
Surplus Fund,		2,000,000.00
Undivided Profits,		581,353.97
Time Deposits,	$15,739,900.07	
Demand Deposits,	14,909,505.94	30,649,406.01
		$35,230,759.98

CONTRACTORS, ILLINOIS TRUST AND SAVINGS BANK, CHICAGO.

CONTRACTORS, ILLINOIS TRUST AND SAVINGS BANK, CHICAGO.

HERRING-HALL-MARVIN CO.

SUCCESSORS TO

HALL'S SAFE & LOCK CO.

OPERATING

HALL'S SAFE & LOCK WORKS

MANUFACTURERS OF

SAFE DEPOSIT AND BANK VAULTS

AND

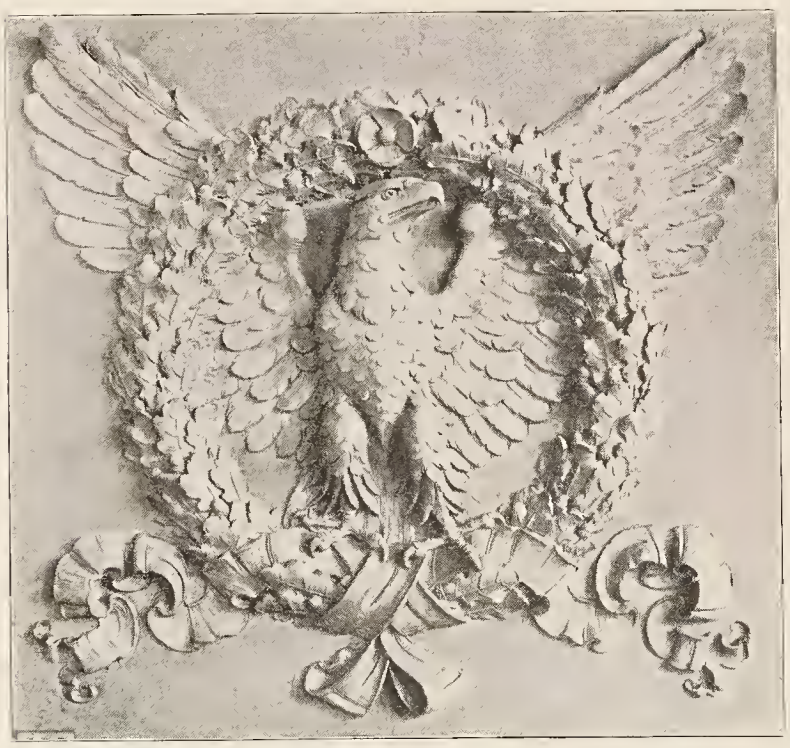
BANKERS' SAFES,

ALSO COMBINED FIRE AND BURGLAR PROOF SAFES AND FIREPROOF SAFES.

Sole Manufacturers and Users of Hall's Nonpareil Automatic Bolt and Solid Door Principle, totally preventing the successful use of Explosive Compounds.

Also Exclusive Rights to other Valuable Improvements. Contractors to the United States Treasury Department. Correspondence solicited.

OFFICE: CINCINNATI. FACTORIES: CINCINNATI AND NEW YORK.



BRONZE BAS-RELIEF ABOVE MAIN ENTRANCE OF THE BANK BUILDING.

THE

ORNAMENTAL BRONZE AND IRON

FOR THE NEW BUILDING

OF THE

Illinois Trust & Savings Bank

CHICAGO, ILL.

... WAS EXECUTED BY ...

The Winslow Bros. Company,

CHICAGO, ILL.

(SEE INSIDE PAGES FOR DESCRIPTION OF OUR WORK.)

CONTRACTORS, ILLINOIS TRUST AND SAVINGS BANK, CHICAGO.

CONTRACTORS, ILLINOIS TRUST AND SAVINGS BANK, CHICAGO.

Chicago Edison Company,

Edison Building, 139 Adams Street.

Almost important feature of our business is the equipping of Modern Fireproof Buildings for the use of Electric Light and Power, and we have facilities for doing such work beyond the reach of smaller contractors. We carry in our supply department a full line of Electric Light and Power Construction Material, and furnish electric current from our Street Mains for the operation of Lights, Motors, Elevators, etc. We respectfully solicit the patronage of the Chicago public.

THE SIMPLEX ELECTRICAL CO.

75-81 Cornhill, BOSTON, MASS. 1137-1138 Monadnock Block, CHICAGO, ILL.

WESTERN SELLING AGENT,
H. R. HIXSON.

Simplex Braided Caoutchouc Wires and Cables

Used exclusively in Electric Wiring

ILLINOIS TRUST AND SAVINGS BANK,

Also the following buildings:

SCHILLER THEATER AND OFFICE BUILDING, Chicago.
MASONIC TEMPLE, Chicago.
PULLMAN BUILDING, Chicago.
ILLINOIS CENTRAL R. R. STATION, Chicago.
TITLE AND TRUST BUILDING, Chicago.
TEUTONIC BUILDING, Chicago.
ACADEMY OF NATURAL SCIENCES, Chicago.
CONGRESSIONAL LIBRARY, Washington, D. C.
CITY HALL, Milwaukee, Wis.
HOTEL PFISTER, Milwaukee, Wis.
SOUTHERN HOTEL, St. Louis, Mo.
ST. NICHOLAS HOTEL, St. Louis, Mo.
WAINWRIGHT BUILDING, St. Louis, Mo.
GUARANTY BUILDING, Buffalo, N. Y.
ELLICOTT SQUARE BUILDING, Buffalo, N. Y.
MAJESTIC BUILDING, Detroit, Mich.
CHAMBER OF COMMERCE, Detroit, Mich.

"To Save Time is to Lengthen Life."

The Independent Double Tube Vacuum System.

The Shifting Current Vacuum System.

BOSTEDO PNEUMATIC (DESPATCH) TUBES.

The Steam-Compressed Air System.

The Hydraulic-Pneumatic System.

FOR RAPID TRANSMISSION OF CASH, MESSAGES, PAPERS, ORDERS, ETC., FROM FLOOR TO FLOOR AND DEPARTMENT TO DEPARTMENT.

We Equip Public and City Buildings, Store Buildings, Office Buildings, Hotels, Newspaper Offices, Banks, Etc.

A few prominent concerns whose establishments are equipped with Bostedo Pneumatic Tubes:

Marshall Field & Co., Chicago.
Schlesinger & Mayer, Chicago.
The Fair, Chicago.
Siegel-Cooper & Co., Chicago.
Chicago Public Library, Chicago.
Illinois Trust and Savings Bank, Chicago.
The Chicago Club, Chicago.
B. Altman & Co., New York City.
H. O'Neill & Co., New York City.
Bloomingdale Bros., New York City.
Ehrich Bros., New York City.
Bank of Commerce, New York City.
The Nat'l Bank of Denver, Denver, Colo.
Marks Bros., Philadelphia.
The Philadelphia Enquirer, Philadelphia.
Joel Gutman & Co., Baltimore.
A. Lisner & Co., Washington, D. C.
Chamberlain, Johnson & DuBose Co., Atlanta, Ga.
Robt. Simpson Co., Toronto, Ont.
Jas. Ogilvy & Sons, Montreal, Que.
Jos. Horne & Co., Pittsburg, Pa.
Herman Straus, Louisville, Ky.
Wm. Taylor, Son & Co., Cleveland, Ohio.
The Mabley & Goodfellow Co., Detroit, Mich.
The Emporium Company, San Francisco, Cal.

PLANS AND ESTIMATES FURNISHED.

Bostedo Package and Cash Carrier Company.

CHICAGO: 156 Lake Street. **NEW YORK: 156 Fifth Avenue.**

WESTINGHOUSE, CHURCH, KERR & CO.

ENGINEERS,

GENERAL MECHANICAL ENGINEERING AND CONTRACTING,

INVOLVING THE USE OF THE BEST APPARATUS IN EVERY LINE, ADAPTED IN SIZES AND ECONOMY TO BEST MEET THE CUSTOMER'S REQUIREMENTS.

REFRIGERATING PLANTS
OF ALL SIZES AND FOR ALL PURPOSES.

SIMPLE AND COMPOUND STEAM ENGINES
OF ALL SIZES AND ADAPTED FOR EVERY SERVICE.

COMPLETE STEAM PLANTS
FOR MILLS, FACTORIES, PUBLIC BUILDINGS AND ELECTRIC STATIONS.

MECHANICAL STOKERS
FOR SAVING LABOR AND FUEL.

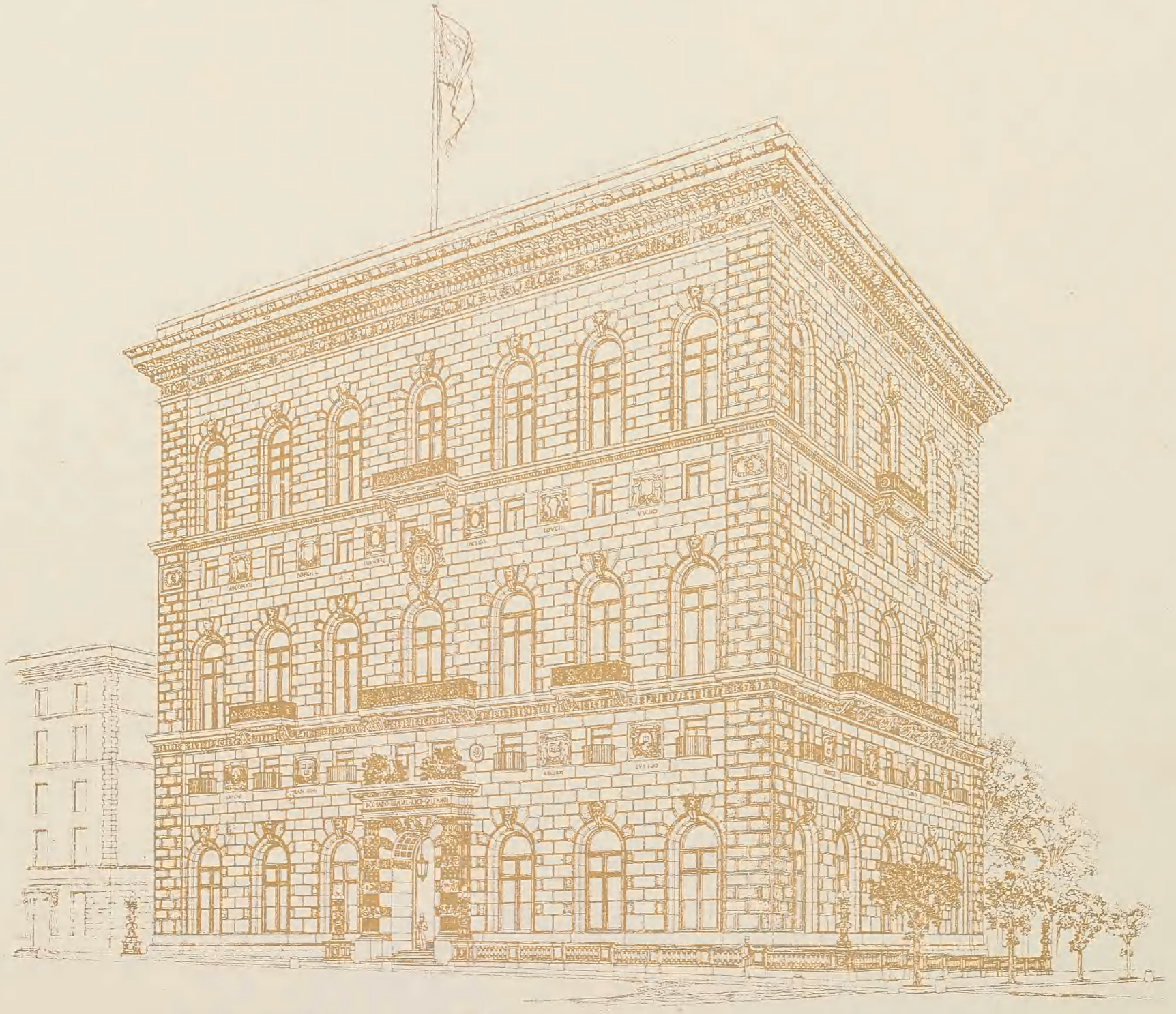
MECHANICAL DRAFT PLANTS
FOR HIGH EFFICIENCY AND AVOIDING HIGH STACKS.

GAS ENGINES
THAT REGULATE AND RUN ECONOMICALLY.

COMPLETE ELECTRIC PLANTS
FOR ELECTRIC LIGHT, POWER AND STREET RAILWAY SERVICE.

STEAM LOOPS FOR DRAINING STEAM PIPES, SAVING COAL AND PREVENTING ACCIDENTS.

NEW YORK, 26 Cortlandt St. **BOSTON, 53 State St.** **PITTSBURG, Westinghouse Building.** **CHICAGO, 171 La Salle St.**
GRAND RAPIDS, MICH., Michigan Trust Building.



DESIGN FOR NEW UNIVERSITY CLUB BUILDING, NEW YORK CITY.

McKIM, MEAD & WHITE, ARCHITECTS.

SITUATION WANTED.

A young man twenty-eight years old, good education, A-1 personal appearance, thorough salesman, five years' business experience, six years' practice at architecture, one of firm five years, wants to make engagement with architect, contractor or building material firm — outside work. Location no object. Best of reference given. Bond if required. Would make contract at once; thirty days from date preferable.

Address R,
Care INLAND ARCHITECT.

THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXIX. ADVERTISERS' TRADE SUPPLEMENT. No. 4

ASBESTOS

This trade-mark, the address 87 Maiden Lane, and the name H. W. Johns Manufacturing Company, have been so long associated that the mention of one immediately suggests the other two to those who have been served by the varied manufactures of this company. The offices at 87 Maiden Lane were established twenty-five years ago, and it is therefore after long hesitation that a change in address has been decided upon. Department has been added to department, and the trade has increased until each has assumed the proportion of a large business in itself, and a removal has been absolutely necessary.

The ground floor of the new Woodbridge building at William, John and Platt streets has been leased and is now being fitted up for salesrooms, accounting department and private offices, and the basement for stock.

It is to be one of the handsomest offices in the metropolis, and with these increased facilities the company promises even more perfect service to its customers than in the past.

The facile power of adapting inventive genius to practical purposes possessed by Mr. Johns, who is still the active head of the business, has rendered his discoveries of the peculiar and valuable properties of this wonderful mineral of the greatest importance to man. The products of asbestos are now indispensable for household and mechanical purposes. Liquid paints, roofing and other fireproof construction materials, heat insulating coverings for steam pipes, boilers, etc., steam packings, fireproof cements, cloth, rope, cord, twine and numerous other articles which space prevents our mentioning, all bear the trademark of this company, which always means excellence.

TRADE NOTES.

THE Powers Regulator Company are installing their system of automatic heat regulation in the following buildings: Liggett & Myers Tobacco Company's office, St. Louis; New City Hall, St. Louis; Longfellow and West End Schools, Boston; Y. M. C. A. building, Cambridge, Mass.; High School, New Bedford, Mass.; residence of Archbishop Feehan, Feehansville, Ill.

SOME time since an engineer in a large factory called the attention of a visiting expert electrician to the electricity in a big driving belt, and was quite surprised when the expert informed him that the electricity was caused by the belt slipping. The expert added that it was simply a wasting of power and could be prevented by applying Dixon's Traction Belt Dressing, made by the Joseph Dixon Crucible Company, Jersey City, New Jersey. This dressing was applied and the electricity disappeared at once. Electricity in belts is not only a waste of power, but is also an element of danger by fire.

FROM their St. Petersburg office, the Buffalo Forge Company, Buffalo, New York, have recently received an order for two engines of the inclosed type, running in oil. Both are of the same size (8 by 10), and they are to be shipped to St. Petersburg, Russia. These engines will be used for electric lighting. The demand for this class, both at home and abroad, is steadily growing, especially in foreign markets. Little effort has been made to secure business from this source, the orders received having come almost voluntarily as a result of prospective purchasers having inspected previous installations before buying. Throughout the dull times of the past few years, the engine department of this company has been very busy, and unable to keep up with orders. The erection of a new five-story building, 60 by 210 feet, is now in hand; the latest improved machinery, testing appliances, etc., will be installed to the end of making these engine works in capacity and equipment second to none in the United States. At the present writing the stables and warehouse facilities are being enlarged by the erection of additional buildings.